

Location:	James Ranch Unit 19 Battery	
Spill Date:	6/12/2023	
Area 1		
Approximate Area =	285.00	sq. ft.
Average Saturation (or depth) of spill =	3.00	inches
Average Porosity Factor =	0.03	
VOLUME OF LEAK		
Total Crude Oil =	0.00	bbls
Total Produced Water =	10.38	bbls
TOTAL VOLUME OF LEAK		
Total Crude Oil =	0.00	bbls
Total Produced Water =	10.38	bbls
TOTAL VOLUME RECOVERED		
Total Crude Oil =	0.00	bbls
Total Produced Water =	10.00	bbls



August 29, 2025

New Mexico Oil Conservation Division

1220 South St. Francis Street
Santa Fe, New Mexico 87505

**Re: Closure Request Addendum
James Ranch Unit 19 Tank Battery
Facility ID: fAPP2123050100
Incident Number NAPP2317142256
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared this *Closure Request Addendum* to present additional remediation activities completed at the James Ranch Unit 19 Tank Battery (Site), in response to the denial of the original *Closure Request*, submitted to the New Mexico Oil Conservation Division (NMOCD) on September 8, 2023. In the denial, NMOCD indicated that an insufficient number of samples was collected. Based on soil sampling activities described below, XTO is submitting this *Closure Request Addendum* and requesting no further action for Incident Number NAPP2317142256.

BACKGROUND

The Site is located in Unit J, Section 36, Township 22 South, Range 30 East, in Eddy County, New Mexico (32.34666°, -103.83248°) and is associated with oil and gas exploration and production operations on State Trust Land (Lease number E052290010) managed by the New Mexico State Land Office (NMSLO).

On June 12, 2023, corrosion of the main produced water line caused 10.38 barrels (bbls) of produced water to release onto the surface of the Site facility pad. A vacuum truck was dispatched and recovered 10.0 bbls of released fluid. In total, 0.38 bbls of released fluid was unrecovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on June 20, 2023, on a *Release Notification* Form C-141 (Form C-141). The release was assigned Incident Number NAPP2317142256.

The *Closure Request* detailed the Site characterization completed to assess the applicability of Table I Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented in the original *Closure Request* submitted September 8, 2023. The Site is in a medium potential karst designation area; however, the release and a majority of the remedial activities occurred prior to December 1, 2024, the effective date of the NMOCD published Karst Potential Occurrence Zones Public Notice. Potential Site receptors are identified on Figure 1. Based on the results of the Site characterization, the following 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

Ensolum, LLC | Environmental, Engineering & Hydrogeologic Consultants
3122 National Park Highway | Carlsbad, NM 88220 | ensolum.com

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- Chloride: 20,000 mg/kg

Between July 7 and July 20, 2023, Ensolum conducted Site assessment, delineation, and excavation activities in response to the release. XTO submitted a *Closure Request* on September 8, 2023, requesting no further action (NFA) following delineation of the release and excavation of all soil exceeding the Closure Criteria. Delineation samples were collected from the release as shown on Figure 2. Confirmation samples were collected from the excavation as shown on Figure 3. All previously completed remedial activities are described in the original *Closure Request* included in Appendix A. On January 26, 2024, NMOCD denied the *Closure Request* for Incident Number NAPP2317142256 for the following reasons:

The Remediation Closure Report is Denied. Additional Samples need to be taken near the "Point of Release" and another sample in between sample SS01 and SS02. Sidewall sample SW01 needs to be delineated to 600 mg/kg. All sidewall samples should be taken from the sidewall of the excavation. 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 to conduct horizontal delineation samples 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. Please make sure that the edge of the release extent is accurately defined. Additionally, 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. "Step-out" samples should never be conducted if equipment is in the vicinity of the release area.

NMSLO CULTURAL RESOURCES AND BIOLOGICAL REVIEW

Cultural Properties Protection

Since the release occurred on the well pad, the site is exempt from the Cultural Properties Protection Rule (CPP). As such, no additional cultural resource surveys were completed in connection with this release.

Biological Review

Ensolum personnel conducted a desktop review to establish if the Site is within an area of possible threatened, endangered, and sensitive wildlife and plant species, environmentally sensitive areas, surface waters, and sensitive soils.

- A review of the U.S. Fish and Wildlife Services Information for Planning and Consultation (IPaC) resources indicated there are no critical wildlife habitats at the Site. However, potential habitats for Piping Plover and the Texas Hornshell may be present near the Site. A review of the New Mexico Bureau of Land Management Plant Wildlife Habitat maps indicated potential habitats for Lesser Prairie Chicken, Scheer's beehive cactus and Wright's waterwillow were also indicated near the Site. Threatened and endangered plant species are potentially present in the area surrounding the Site; however, no native vegetation outside of the well pad extent was disturbed during remediation activities.
 - From March 1st through June 15th, no remediation activities will occur between the hours of 3:00 am to 9:00 am to protect any Lesser Prairie Chickens within the area.
- The Site is located within an area of possible range of the Lesser Prairie Chicken habitat based on a review of NMSLO CCAA map.

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- No environmentally sensitive receptors were located near the Site, as determined by the Site Characterization.
- The Natural Resources Conservation Service (NRCS) Web Soil Survey classifies the soil type at the Site as Berino complex, 0 to 3 percent slopes, eroded. The Berino complex is not considered a sensitive soil per the NMSLO guidelines.

DELINEATION SOIL SAMPLING ACTIVITIES AND ANALYTICAL RESULTS

On March 1, 2024, Ensolum personnel returned to the Site to collect additional samples within and around the release extent to confirm the vertical and lateral extent of the release. Delineation samples SS08 through SS13 were collected around the release extent at a depth of 0.5 feet bgs to confirm the lateral extent of the release. Two boreholes (BH03 and BH04) were advanced within the release extent to vertically define the release extent. The boreholes were advanced via hand auger to a depth of 4 feet bgs. The delineation soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. Field screening results and observations for the boreholes were logged on lithologic/soil sampling logs, which are included in Appendix B. The delineation soil sample locations are depicted on Figure 4.

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 the following contaminants 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. Photographic documentation of the delineation soil sampling activities is included in Appendix C. The release extent, excavation extent, and soil sample locations are presented on Figure 4.

Laboratory analytical results for all delineation soil samples collected indicated all COC concentrations were in compliance with the Closure Criteria. Additionally, the release was delineated laterally to the most stringent Table I Closure Criteria. The laboratory analytical results are summarized on Table 1 and the complete laboratory analytical reports are included in Appendix D.

As previously reported, the excavation area measured approximately 161 square feet. The impacted soil was transported and properly disposed of at the R360 Disposal Facility in Hobbs, New Mexico. A total of 10 cubic yards of impacted soil were removed from the Site. The excavation has been backfilled with material purchased locally and the Site has been recontoured to match pre-existing Site conditions. The release remained on the active facility pad. As such, the release area is not expected to be reclaimed until the facility is reclaimed. The Reclamation Plan for this release will default to the NMSLO-approved Reclamation Plan for the well pad per 19.2.100.67 NMAC.

CLOSURE REQUEST

Additional soil sampling activities were conducted at the Site to address the June 12, 2023, produced water release. Laboratory analytical results from all samples collected from the final release extent and release area indicated that all COC concentrations were in compliance with the Closure Criteria. Based on laboratory analytical results, impacted soil exceeding the Site Closure Criteria has been excavated and no further remediation is required at this time. However, soil on the facility pad exceeding the reclamation requirements of NMAC 19.15.29.13.D (1) will be removed during the final reclamation of the facility pad. The excavation was backfilled with material purchased locally and the surface recontoured to match pre-existing Site conditions. Approximately 1,207 square feet of waste-containing soil remains in place. Following Site decommissioning, an estimated 179 cubic yards of waste-containing soil exceeding the reclamation requirement, but below Closure Criteria, will be reclaimed. The presence of

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waste-containing soil present on-pad does not cause an imminent risk to human health, the environment, or groundwater.

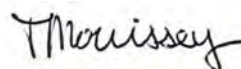
Excavation of impacted soil has mitigated impacts at this Site. Depth to groundwater is confirmed to be greater than 100 feet bgs and no other sensitive receptors were identified near the release extent. XTO believes these remedial actions are protective of human health, the environment, and groundwater. As such, XTO respectfully requests closure for Incident Number NAPP2317142256.

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

Sincerely,
Ensolum, LLC



Ashley Holmes
Senior Geologist



Tacoma Morrissey
Associate Principal

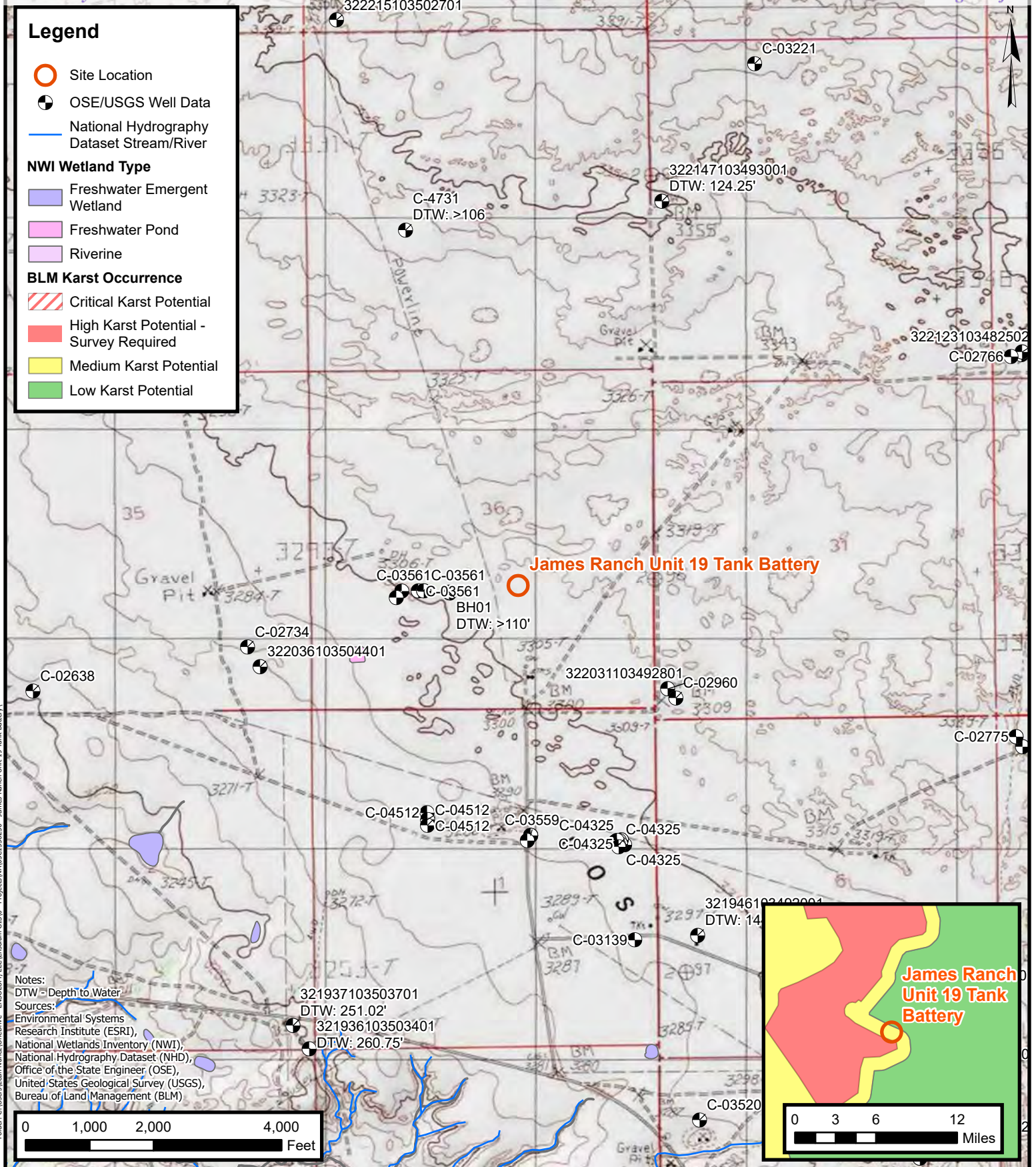
cc: Kaylan Dirkx, XTO
Colton Brown, XTO
NMSLO

Attachments:

Figure 1	Site Receptor Map
Figure 2	Delineation Soil Sample Locations
Figure 3	Excavation Soil Sample Locations
Figure 4	Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Closure Request Report; dated September 8, 2023
Appendix B	Lithologic Soil Sampling Logs
Appendix C	Photographic Log
Appendix D	Laboratory Analytical Reports & Chain-of-Custody Documentation



FIGURES

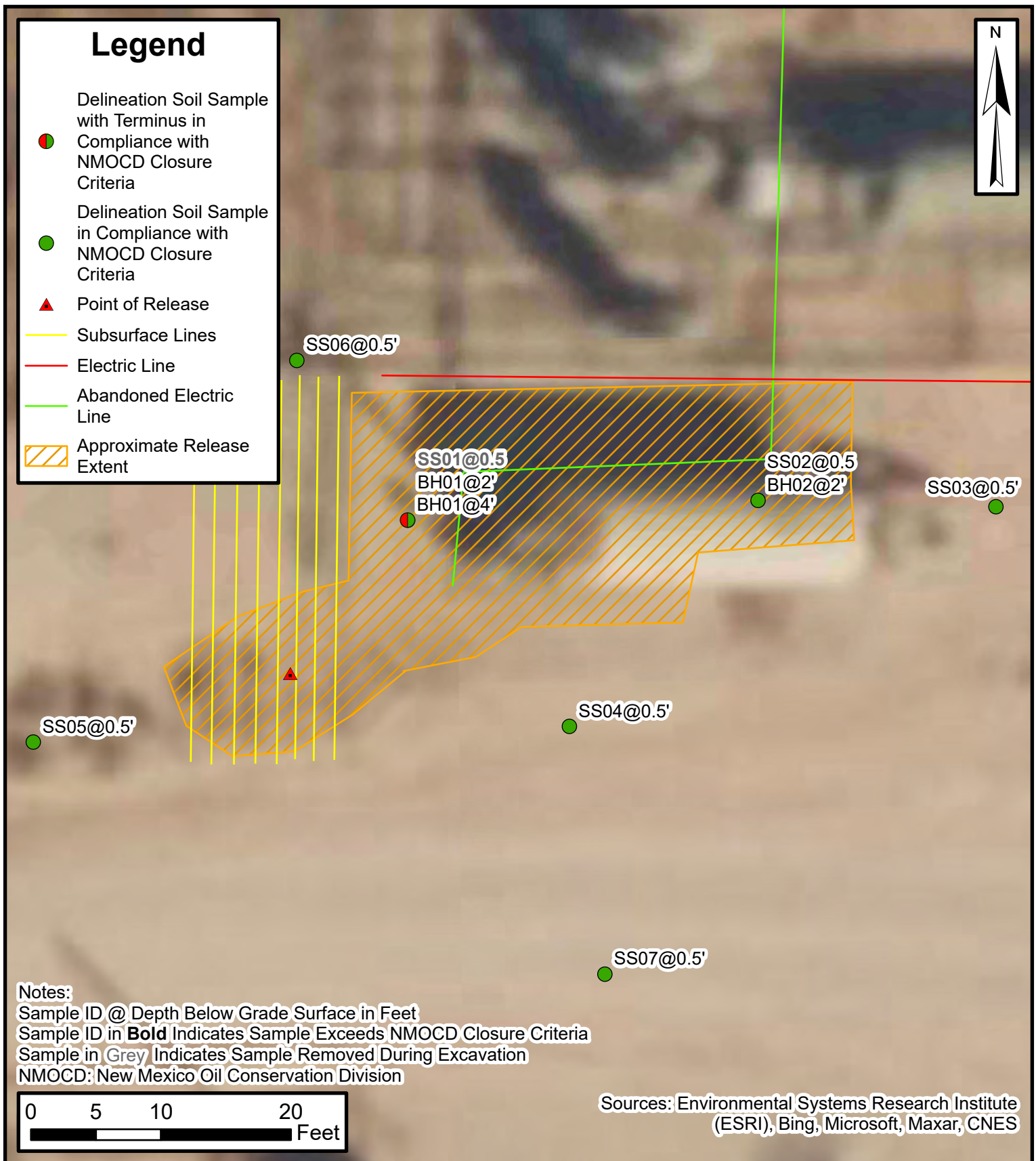


Site Receptor Map

XTO Energy, Inc.
James Ranch Unit 19 Tank Battery
Incident Number: NAnAPP2317142256
32.34666, -103.83248
Eddy County, New Mexico

FIGURE

1



Delineation Soil Sample Locations

James Ranch Unit 19 Tank Battery

XTO Energy, Inc.

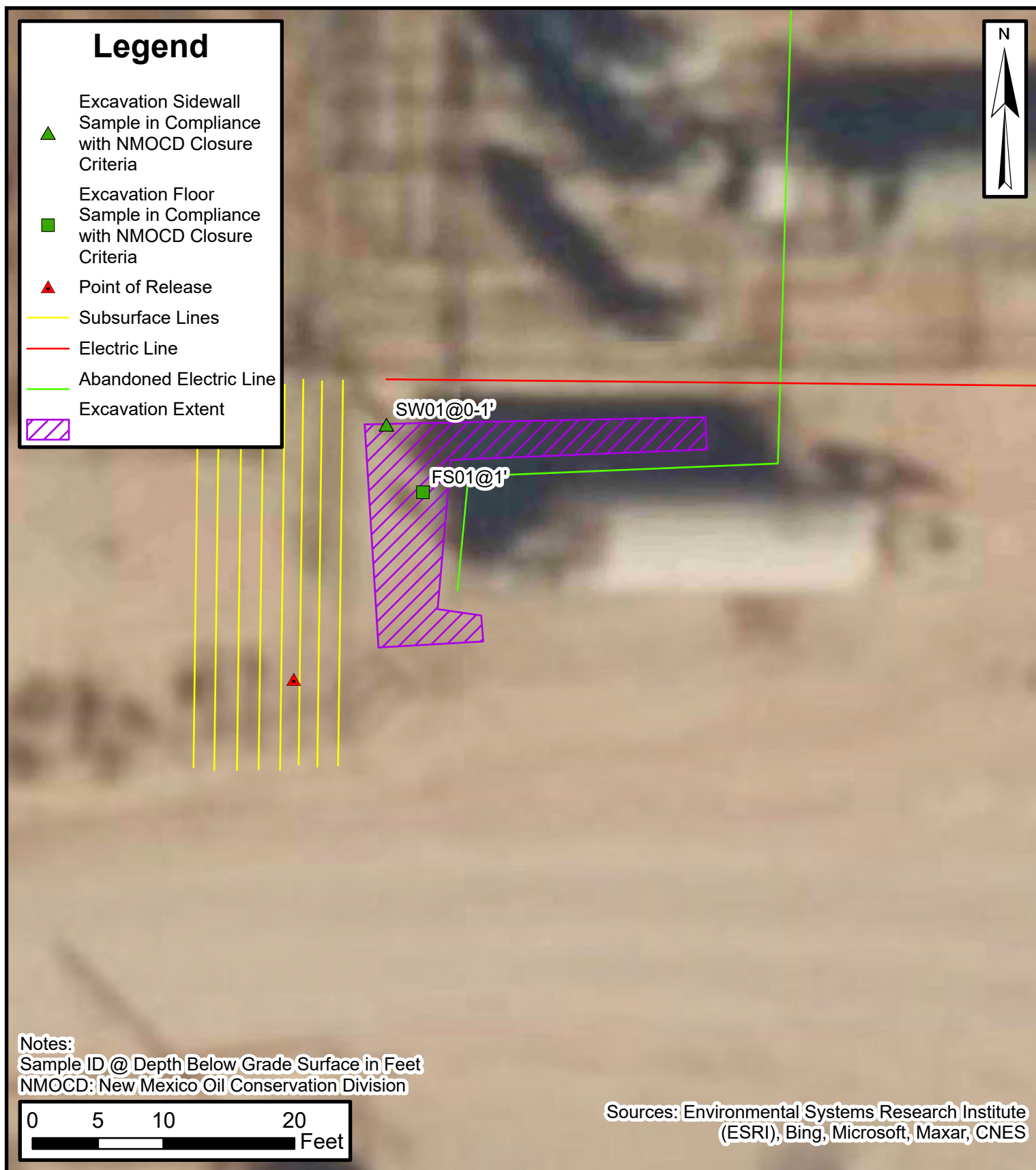
Incident Number: nAPP2317142256

32.34666, -103.83248

Eddy County, New Mexico

FIGURE

2



Excavation Soil Sample Locations

James Ranch Unit 19 Tank Battery

XTO Energy, Inc.

Incident Number: nAPP2317142256

32.34666, -103.83248

Eddy County, New Mexico

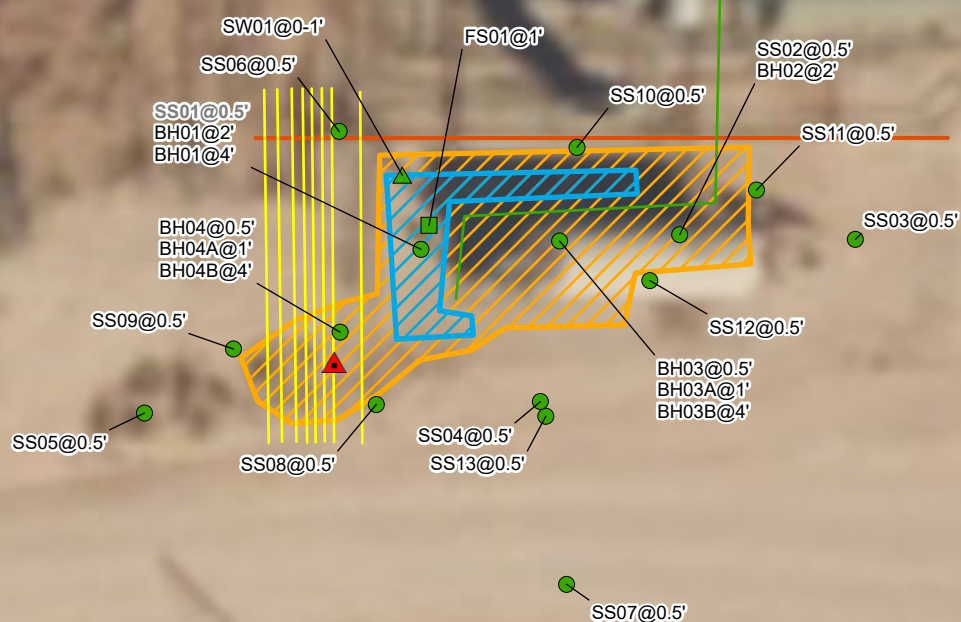
FIGURE

3



Legend

- Excavation Floor Sample in Compliance with Closure Criteria
- ▲ Excavation Sidewall Sample in Compliance with Closure Criteria
- Delineation Soil Sample in Compliance with Closure Criteria
- ▲ Point of Release (POR)
- Electric Utility Line
- Oil and Gas Utility Line
- Abandoned Electric Line
- ▨ Release Extent
- ▨ Excavation Extent



Notes:

Sample ID @ Depth Below Ground Surface.
 Samples in bold indicate sample exceeded applicable closure criteria.
 Grey text indicate soil sample was removed during excavation activities.

0 5 10 20 30 40
 Feet

Sources: Environmental Systems Research Institute (ESRI)



Soil Sample Locations

XTO Energy, Inc.
 James Ranch Unit 19 Tank Battery
 Incident Number: NAPP2317142256
 Unit J, Sec 36, T22S, R30E
 Eddy County, New Mexico

FIGURE

4



TABLES



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
 James Ranch Unit 19 Tank Battery
 XTO Energy, Inc
 Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Delineation Soil Samples										
SS01	07/07/2023	0.5	<0.00198	<0.00396	<50.1	164	<50.1	164	164	31,700
BH01	07/20/2023	2	<0.00199	<0.00398	<50.3	<50.3	<50.3	<50.3	<50.3	92.1
BH01	07/20/2023	4	<0.00200	<0.00400	<50.5	50.7	<50.5	50.7	50.7	389
SS02	07/07/2023	0.5	<0.00200	<0.00399	<49.5	<49.5	<49.5	<49.5	<49.5	17,500
BH02	07/20/2023	2	<0.00200	<0.00399	<50.3	<50.3	<50.3	<50.3	<50.3	92.6
SS03	07/07/2023	0.5	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	154
SS04	07/07/2023	0.5	<0.00202	<0.00403	<50.4	135	<50.4	135	135	52.2
SS05	07/07/2023	0.5	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	34.3
SS06	07/07/2023	0.5	<0.00201	<0.00402	<49.8	79.9	<49.8	79.9	79.9	49.7
SS07	07/20/2023	0.5	<0.00201	<0.00402	<50.2	<50.2	<50.2	<50.2	<50.2	60.9
SS08	03/01/2024	0.5	<0.00199	<0.00398	<50.5	<50.5	<50.5	<50.5	<50.5	360
SS09	03/01/2024	0.5	<0.00199	<0.00398	<49.7	<49.7	<49.7	<49.7	<49.7	54.6
SS10	03/01/2024	0.5	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	<50.0	197
SS11	03/01/2024	0.5	<0.00200	<0.00399	<50.2	57.8	<50.2	57.8	57.8	85.4
SS12	03/01/2024	0.5	<0.00201	<0.00402	<50.5	<50.5	<50.5	<50.5	<50.5	345
SS13	03/01/2024	0.5	<0.00201	<0.00402	<49.8	70.8	<49.8	70.8	70.8	581
BH03	03/01/2024	0.5	<0.00201	0.00498	<50.1	532	<50.1	532	532	214
BH03A	03/01/2024	1	<0.00199	<0.00398	<50.4	202	<50.4	202	202	88.5
BH03B	03/01/2024	4	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	789
BH04	03/01/2024	0.5	<0.00199	<0.00398	<49.8	165	<49.8	165	165	57.0
BH04A	03/01/2024	1	<0.00198	<0.00396	<50.0	133	<50.0	133	133	51.9
BH04B	03/01/2024	4	<0.00201	<0.00402	<50.0	407	<50.0	407	407	84.2



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
 James Ranch Unit 19 Tank Battery
 XTO Energy, Inc
 Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Confirmation Soil Samples										
FS01	07/20/2023	1	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	97.5
SW01	08/03/2023	0 - 1	<0.00200	<0.00400	<50.1	94.1	<50.1	94.1	94.1	738

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

NMAC: New Mexico Administrative Code

Concentrations in **bold** exceed the NMOCD Table I Closure Criteria

Grey text indicates soil sample removed during excavation activities

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon



APPENDIX A

Closure Request Report;
Dated September 8, 2023



September 6, 2023

New Mexico Oil Conservation Division

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

**Re: Closure Request
James Ranch Unit 19 Battery
Incident Number NAPP2317142256
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared this *Closure Request* to document assessment, excavation, and soil sampling activities at the James Ranch Unit 19 Battery (Site). The purpose of the Site assessment, excavation, and soil sampling activities was to address impacts to soil following a release of produced water at the Site. Based on excavation activities and soil sample laboratory analytical results, XTO is submitting this *Closure Request*, describing remediation that has occurred and requesting closure for Incident Number NAPP2317142256.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit J, Section 36, Township 22 South, Range 30 East, in Eddy County, New Mexico (32.34666°, -103.32248°) and is associated with oil and gas exploration and production operations on state land managed by the New Mexico State Land Office (NMSLO).

On June 12, 2023, corrosion of the main produced water line caused 10.38 barrels (bbls) of produced water to release onto the surface of the Site facility pad. A vacuum truck was dispatched and recovered 10.0 bbls of released fluid. In total, 0.38 bbls of released fluid was unrecovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on June 20, 2023, on a *Release Notification* Form C-141 (Form C-141). The release was assigned Incident Number NAPP2317142256.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized to assess the applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization. Potential Site receptors are identified on Figure 1.

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is the New Mexico Office of the State Engineer (OSE) well C-04387-POD1, located approximately 0.19 miles west of the Site. This boring was advanced in January 2020 to assess depth to groundwater in the area. The boring was drilled to a total depth of 110 feet bgs and allowed to equilibrate for at least 72 hours to allow for slow infill of water to enter the well, if present. Groundwater was not detected during drilling or after the 72-hour waiting period. The well permit and boring log is included in Appendix A. All wells used to determine depth are presented on Figure 1.

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, significant water course, or wetland. The

Site is greater than 1,000 feet from 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 (medium potential karst designation area).

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

CULTURAL RESOURCE SURVEY

Since the release remained on pad, an assessment of cultural properties had already been completed prior to the construction of the well pad and as such, the Cultural Properties Protection Rule (CPP) has been followed. No additional cultural resource surveys were completed in connection with this release.

INITIAL SITE ASSESSMENT ACTIVITIES

On July 7, 2023, Site assessment activities were conducted by Ensolum personnel to evaluate the release extent based on information provided on the Form C-141 and visual observations. Six delineation soil samples (SS01 through SS06) were collected within and around the release extent at a depth of 0.5 feet bgs. All soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. The release extent and soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photo documentation was conducted during the Site visits and a photographic log 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 under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of the following chemicals of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

Laboratory analytical results for delineation sample SS01, located within the release extent, contained chloride at a concentration exceeding the Site Closure Criteria. All other COCs analyzed from this sample were in compliance with the Site Closure Criteria. In addition, soil samples collected from locations SS02 through SS06 were in compliance with Site Closure Criteria for all analyzed COCs. Based on the presence of impacted soil in sample SS01, excavation activities appeared to be warranted. Soil analytical results gathered during initial sampling event are summarized on Table 1 and depicted on Figure 2, with complete laboratory analytical results attached in Appendix C.

EXCAVATION ACTIVITIES

On July 20, 2023, Ensolum personnel returned to the Site to collect additional delineation samples and oversee excavation of impacted soil in the vicinity of soil sample SS01. Additional delineation samples were collected from boreholes BH01 (at depths of 2 feet and 4 feet bgs) and BH02 (depth of 2 feet bgs) and surface soil sample SS07 (depth of 0.5 feet bgs) at the locations indicated on Figure 2. These samples were collected to confirm chloride impacts were vertically and laterally delineated in the respective areas. All COC concentrations from the delineation samples collected on July 20, 2023 were in compliance with the Site Closure Criteria. Sample results are summarized in Table 1, with complete laboratory report included in Appendix C. Descriptions of soil and field screening results for boreholes BH01 and BH02 were logged on lithologic/soil sampling logs, which are included in Appendix D.

Based on the initial sampling data and field screening results from locations SS01, BH01, BH02, and SS07, chloride impacted soil was removed via vacuum truck from the area shown on Figure 3. To direct excavation activities, soil was also field screened for VOCs and chloride as the excavation proceeded in the manner described above. The final excavation extended to a depth of 1-foot bgs. Following removal of the impacted soil, 5-point composite soil samples were collected every 200 square feet from the floor and sidewalls 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. Confirmation soil sample FS01 was collected on July 20, 2023 from the floor of the excavation at a depth of 1-foot bgs (shown on Figure 3). Confirmation soil sample SW01 was subsequently collected on August 3, 2023 from the sidewalls of the excavation at depths ranging from the ground surface to 1-foot bgs. All excavation confirmation soil samples were collected, handled, and analyzed following the same procedures described above.

Laboratory analytical results indicated all COC concentrations in soil samples FS01 and SW01 were in compliance with the Closure Criteria. The final excavation extent measured approximately 161 square feet. A total of approximately 10 cubic yards of impacted soil was removed during excavation activities and transported for disposal at R360 Landfill Disposal Facility in Hobbs, New Mexico. The excavation extent and excavation confirmation soil sample locations are presented on Figure 3. Photographic documentation of the excavation is included in Appendix B. After completion of confirmation sampling, the excavation area was secured with fencing. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included in Appendix C. Notification of sampling events to NMOCD and NMSLO are included in Appendix E.

RECLAMATION PLAN

The release remained on the well pad that is currently in operation for oil and gas production purposes. As such, the release area is not expected to be reclaimed until the oil and gas well is plugged and abandoned (P&A'd) and the well pad is reclaimed. The Reclamation Plan for this release will default to the NMSLO-approved Reclamation Plan for the well pad per 19.2.100.67 NMAC. Specifics related to the release as they pertain to reclamation activities include:

- Approximately 10 cubic yards of impacted soil were excavated, transported, and properly disposed of at a State Of New Mexico permitted landfill;
- The excavation will be backfilled with locally sourced caliche to match the well pad's current grade;
- The backfilled area will not be seeded since it is within the active well pad;
- Erosion control management is not necessary since the backfill area is within the active well pad; and

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James Ranch Unit 19 Battery

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- Backfilling of the excavation will be scheduled once this report is approved by the NMOCD. Once completed, photographic documentation of backfilling will be provided to the NMSLO under a separate cover.

CLOSURE REQUEST

Site assessment, delineation, and excavation activities were conducted at the Site to address June 2023 release of produced water. Laboratory analytical results for all excavation soil samples collected from the final excavation extent and delineation activities indicated all COC concentrations were compliant with the Site Closure Criteria. Additionally, laboratory analytical results from soil samples SS03 through SS05, SS07, collected at 0.5 feet bgs, and BH01 and BH02, collected at 2 feet bgs, indicate the released is fully delineated to the strictest Table I Closure Criteria. Based on laboratory analytical results, no further remediation was required. XTO will backfill the excavation with caliche material purchased locally and recontour the Site to match pre-existing Site conditions.

Excavation of soil has mitigated impacts at this Site. Depth to groundwater is confirmed to be greater than 100 feet bgs and no other sensitive receptors were identified near the release extent. XTO believes these remedial actions are protective of human health, the environment, and groundwater. As such, XTO respectfully requests closure for Incident Number NAPP2317142256.

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

Sincerely,
Ensolum, LLC



Stuart Hyde, LG
Senior Geologist



Daniel R. Moir, PG
Senior Managing Geologist

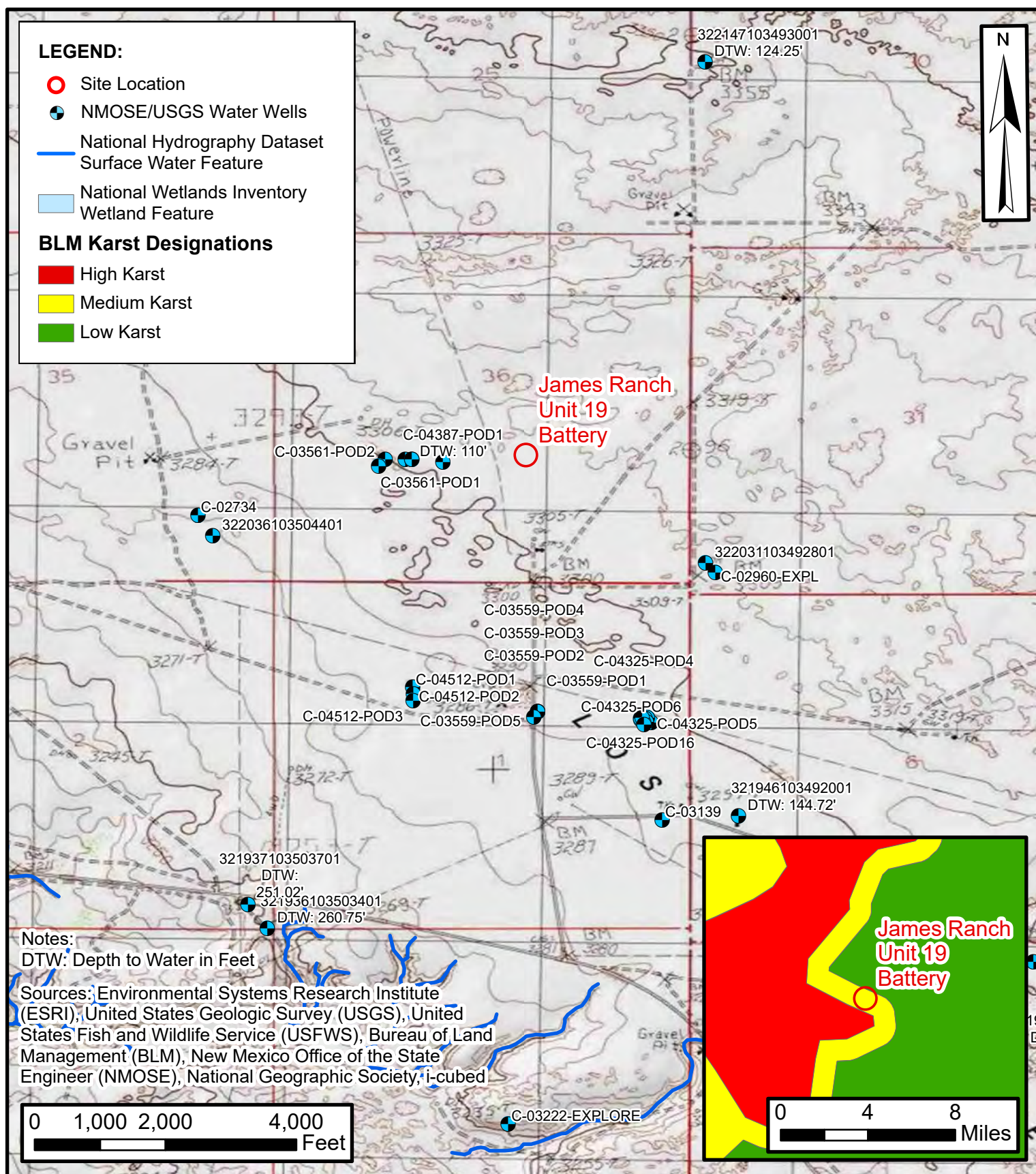
cc: Garrett Green, XTO
New Mexico State Land Office

Attachments:

Figure 1	Site Receptor Map
Figure 2	Delineation Soil Sample Locations
Figure 3	Excavation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Records
Appendix B	Photographic Log
Appendix C	Laboratory Analytical Reports
Appendix D	Lithologic Soil Sampling Logs
Appendix E	NMOCD Notifications/Correspondence



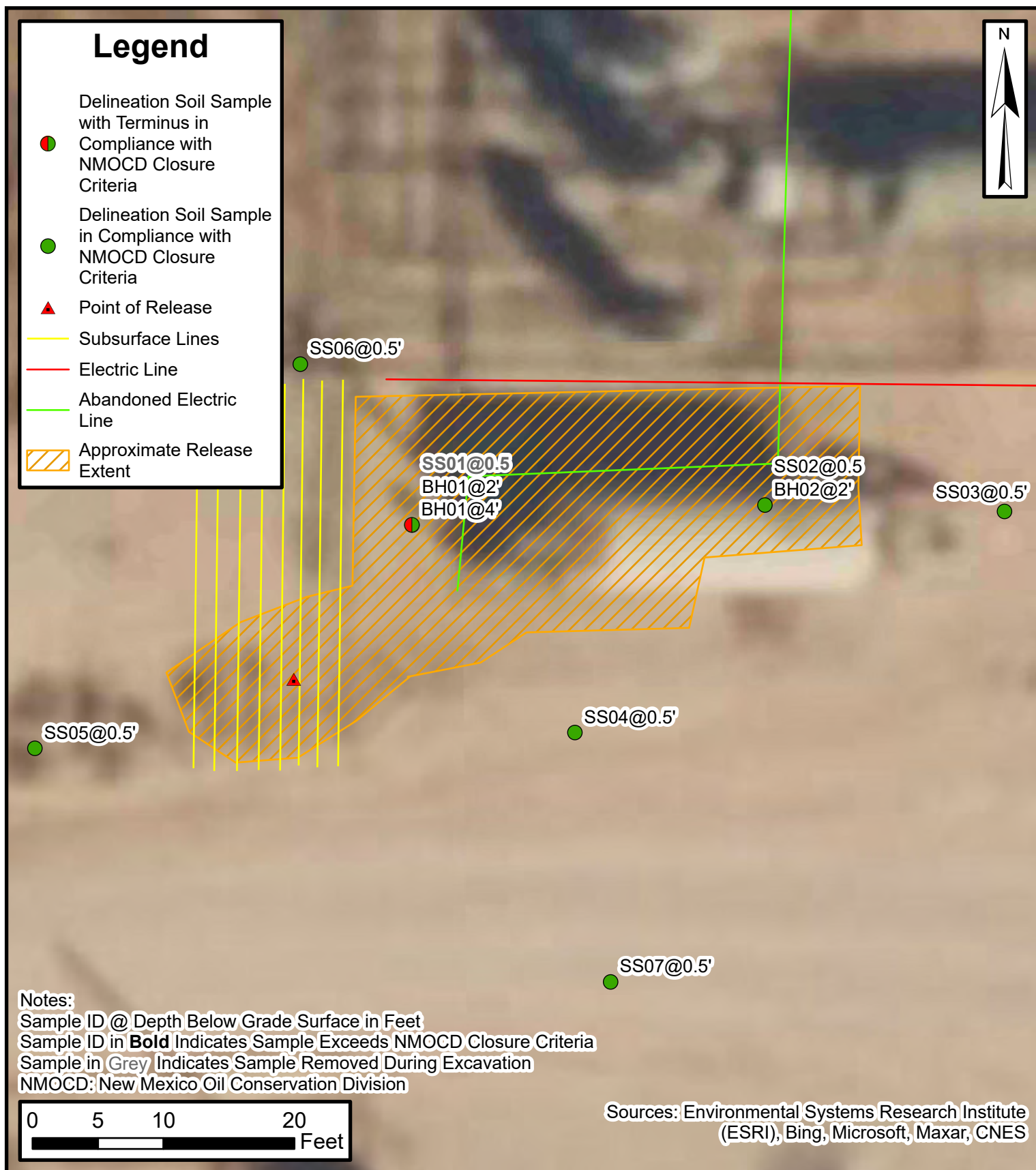
FIGURES



Site Receptor Map

James Ranch Unit 19 Battery
XTO Energy, Inc.
Incident Number: nAPP2317142256
32.34666, -103.83248
Eddy County, New Mexico

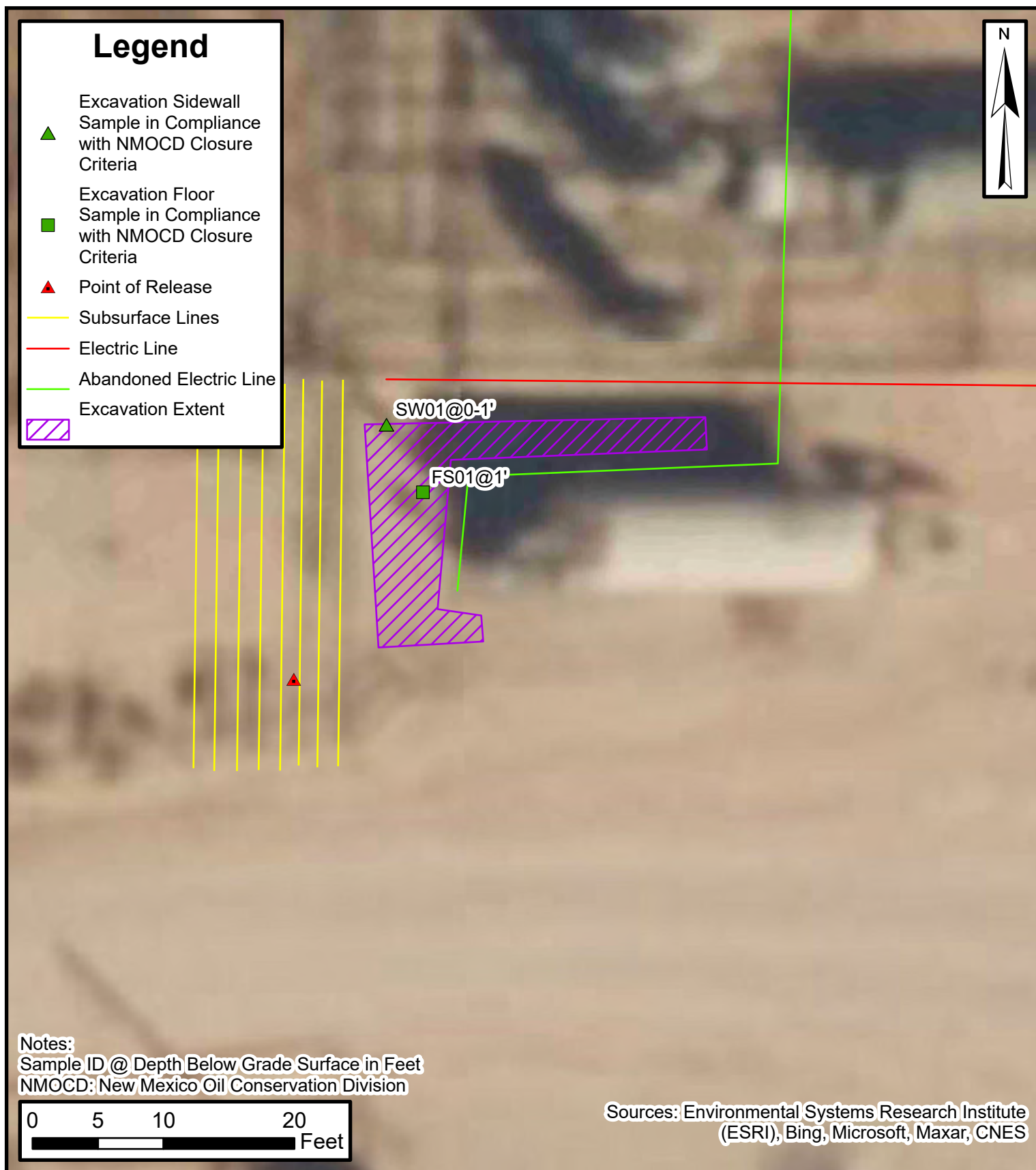
FIGURE
1



Delineation Soil Sample Locations

James Ranch Unit 19 Battery
 XTO Energy, Inc.
 Incident Number: nAPP2317142256
 32.34666, -103.83248
 Eddy County, New Mexico

FIGURE
2



Excavation Soil Sample Locations

James Ranch Unit 19 Battery
 XTO Energy, Inc.
 Incident Number: nAPP2317142256
 32.34666, -103.83248
 Eddy County, New Mexico

FIGURE
3



TABLES



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
James Ranch Unit 19 Battery
XTO Energy, Inc
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Delineation Soil Samples										
SS01	07/07/2023	0.5	<0.00198	<0.00396	<50.1	164	<50.1	164	164	31,700
BH01	07/20/2023	2	<0.00199	<0.00398	<50.3	<50.3	<50.3	<50.3	<50.3	92.1
BH01	07/20/2023	4	<0.00200	<0.00400	<50.5	50.7	<50.5	50.7	50.7	389
SS02	07/07/2023	0.5	<0.00200	<0.00399	<49.5	<49.5	<49.5	<49.5	<49.5	17,500
BH02	07/20/2023	2	<0.00200	<0.00399	<50.3	<50.3	<50.3	<50.3	<50.3	92.6
SS03	07/07/2023	0.5	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	154
SS04	07/07/2023	0.5	<0.00202	<0.00403	<50.4	135	<50.4	135	135	52.2
SS05	07/07/2023	0.5	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	34.3
SS06	07/07/2023	0.5	<0.00201	<0.00402	<49.8	79.9	<49.8	79.9	79.9	49.7
SS07	07/20/2023	0.5	<0.00201	<0.00402	<50.2	<50.2	<50.2	<50.2	<50.2	60.9
Confirmation Soil Samples										
FS01	07/20/2023	1	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	97.5
SW01	08/03/2023	0 - 1	<0.00200	<0.00400	<50.1	94.1	<50.1	94.1	94.1	738

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

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



APPENDIX A

Referenced Well Records



NEW MEXICO OFFICE OF THE STATE ENGINEER

WR-07 APPLICATION FOR PERMIT TO DRILL

A WELL WITH NO WATER RIGHT

(check applicable box):

For fees, see State Engineer website: <http://www.ose.state.nm.us/>

- Purpose:
- | | | |
|---|--|---|
| ☐ Exploratory Well (Pump test) | ☐ Pollution Control And/Or Recovery | ☐ Ground Source Heat Pump |
| ☒ Monitoring Well | ☐ Construction Site/Public Works Dewatering | ☒ Other(Describe): Environmental Sampling |
| | ☐ Mine Dewatering | |

A separate permit will be required to apply water to beneficial use regardless if use is consumptive or nonconsumptive.

☒ Temporary Request - Requested Start Date: December 16, 2019

Requested End Date: TBD

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

1. APPLICANT(S)

Name: Kyle Littrell	Name: Aimee Cole
Contact or Agent: check here if Agent ☐ XTO Energy, Inc.	Contact or Agent: check here if Agent ☐ LT Environmental, Inc.
Mailing Address: 6401 Holiday Hill Road	Mailing Address: 3300 North "A" Street, Building 1 #103
City: Midland	City: Midland
State: Texas Zip Code: 79707	State: Texas Zip Code: 79707
Phone: 432-682-8873 ☐ Home ☐ Cell Phone (Work):	Phone: 720-384-7365 ☐ Home ☒ Cell Phone (Work):
E-mail (optional): kyle_littrell@xtoenergy.com	E-mail (optional): acole@ltenv.com

FOR OSE INTERNAL USE

Application for Permit, Form WR-07, Rev 11/17/16

File No.: C-4387	Trn. No.: 663865	Receipt No.: 2-41496
Trans Description (optional):		
Sub-Basin: CVB	PCW/LOG Due Date: 12-31-20	

2. WELL(S) Describe the well(s) applicable to application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).

District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.

- ☐ NM State Plane (NAD83) (Feet)
 ☐ UTM (NAD83) (Meters)
 ☒ Lat/Long (WGS84) (to the nearest 1/10th of second)
- ☐ NM West Zone
 ☐ Zone 12N
- ☐ NM East Zone
 ☐ Zone 13N
- ☐ NM Central Zone

Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (Quarters or Halves, Section, Township, Range) OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name
C-4387 POD1 SP-11	103 50 9.29 -103.835916	32 20 46.40 32.346280	NE/4 SW/4, SEC36, T22S, R30E

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)

Additional well descriptions are attached: ☐ Yes ☒ No If yes, how many _____

Other description relating well to common landmarks, streets, or other:
Site located at 32.346,-103.835 Eddy County, New Mexico

Well is on land owned by: State of New Mexico

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. Attached? ☐ Yes ☒ No
If yes, how many _____

Approximate depth of well (feet): 100	Outside diameter of well casing (inches): 2.25-6.25
Driller Name: Cascade Drilling LP	Driller License Number: 1664

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

Soil boring to be installed to assess subsurface soil and water. Borings will be advanced in an area previously excavated for remedial purposes. Boring will be completed as a 2-inch inside diameter PVC wells.

Monitoring well is anticipated to be present for up to 2 years. Dry boreholes will be abandoned within 3 days of completion.

Location of the monitoring well is depicted on the attached figure.

FOR OSE INTERNAL USE

Application for Permit, Form WR-07

File No.:

C-4387

Trn No.:

663865

Page 2 of 3

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory: ☐ Include a description of any proposed pump test, if applicable.	Pollution Control and/or Recovery: ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge. ☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	Construction De-Watering: ☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	Mine De-Watering: ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☒ The duration of the planned monitoring.		Ground Source Heat Pump: ☐ Include a description of the geothermal heat exchange project, ☐ The number of boreholes for the completed project and required depths. ☐ The time frame for constructing the geothermal heat exchange project, and, ☐ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), Stuart Hyde, LG

Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Stuart Hyde

Digitally signed by Stuart Hyde
Date: 2019.11.25 08:51:21 -07'00'

Applicant Signature

Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 16th day of December 20 19, for the State Engineer,

John R. D'Antonio, Jr., P.E., State Engineer

By: [Signature]
Signature

Print

Title: Juan Hernandez, Water Resources Manager 1
Print

FOR OSE INTERNAL USE

Application for Permit, Form WR-07

File No.:

C-4387

Trn No.:

663865

Page 3 of 3

**NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE**

SPECIFIC CONDITIONS OF APPROVAL

- 17-1A Depth of the well shall not exceed the thickness of the valley fill.
- 17-4 No water shall be appropriated and beneficially used under this permit.
- 17-6 The well authorized by this permit shall be plugged completely using the following method per Rules and Regulations Governing Well Driller Licensing, Construction, Repair and Plugging of Wells; Subsection C of 19.27.4.30 NMAC unless an alternative plugging method is proposed by the well owner and approved by the State Engineer upon completion of the permitted use. All pumping appurtenance shall be removed from the well prior to plugging. To plug a well, the entire well shall be filled from the bottom upwards to ground surface using a tremie pipe. The bottom of the tremie shall remain submerged in the sealant throughout the entire sealing process; other placement methods may be acceptable and approved by the state engineer. The well shall be plugged with an office of the state engineer approved sealant for use in the plugging of non-artesian wells. The well driller shall cut the casing off at least four (4) feet below ground surface and fill the open hole with at least two vertical feet of approved sealant. The driller must fill or cover any open annulus with sealant. Once the sealant has cured, the well driller or well owner may cover the seal with soil. A Plugging Report for said well shall be filed with the Office of the State Engineer in a District Office within 30 days of completion of the plugging.
- 17-7 The Permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.

Trn Desc: C 04387 POD1

File Number: C 04387

Trn Number: 663865

page: 1

**NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE**

SPECIFIC CONDITIONS OF APPROVAL (Continued)

- 17-B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with 72-12-12 NMSA 1978. A licensed driller shall not be required for the construction of a well driven without the use of a drill rig, provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter.
- 17-C The well driller must file the well record with the State Engineer and the applicant within 30 days after the well is drilled or driven. It is the well owner's responsibility to ensure that the well driller files the well record.
The well driller may obtain the well record form from any District Office or the Office of the State Engineer website.
- 17-P The well shall be constructed, maintained, and operated to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between hydrogeologic zones.
- 17-Q The State Engineer retains jurisdiction over this permit.
- 17-R Pursuant to section 72-8-1 NMSA 1978, the permittee shall allow the State Engineer and OSE representatives entry upon private property for the performance of their respective duties, including access to the ditch or acequia to measure flow and also to the well for meter reading and water level measurement.
- LOG The Point of Diversion C 04387 POD1 must be completed and the Well Log filed on or before 12/31/2020.

IT IS THE PERMITTEES RESPONSIBILITY TO OBTAIN ALL AUTHORIZATIONS AND PERMISSIONS TO DRILL ON PROPERTY OF OTHER OWNERSHIP BEFORE COMMENCING ACTIVITIES UNDER THIS PERMIT.

SHOULD THE PERMITTEE CHANGE THE PURPOSE OF USE TO OTHER THAN MONITORING PURPOSES, AN APPLICATION SHALL BE ACQUIRED FROM THE OFFICE OF THE STATE ENGINEER.

Trn Desc: C 04387 POD1

File Number: C 04387
Trn Number: 663865

**NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE**

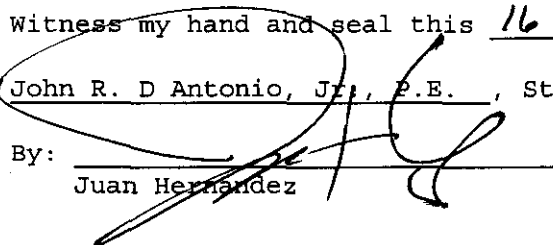
ACTION OF STATE ENGINEER

Notice of Intention Rcvd: Date Rcvd. Corrected:
Formal Application Rcvd: 12/02/2019 Pub. of Notice Ordered:
Date Returned - Correction: Affidavit of Pub. Filed:

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

Witness my hand and seal this 16 day of Dec A.D., 2019

John R. D Antonio, Jr., P.E., State Engineer

By: 

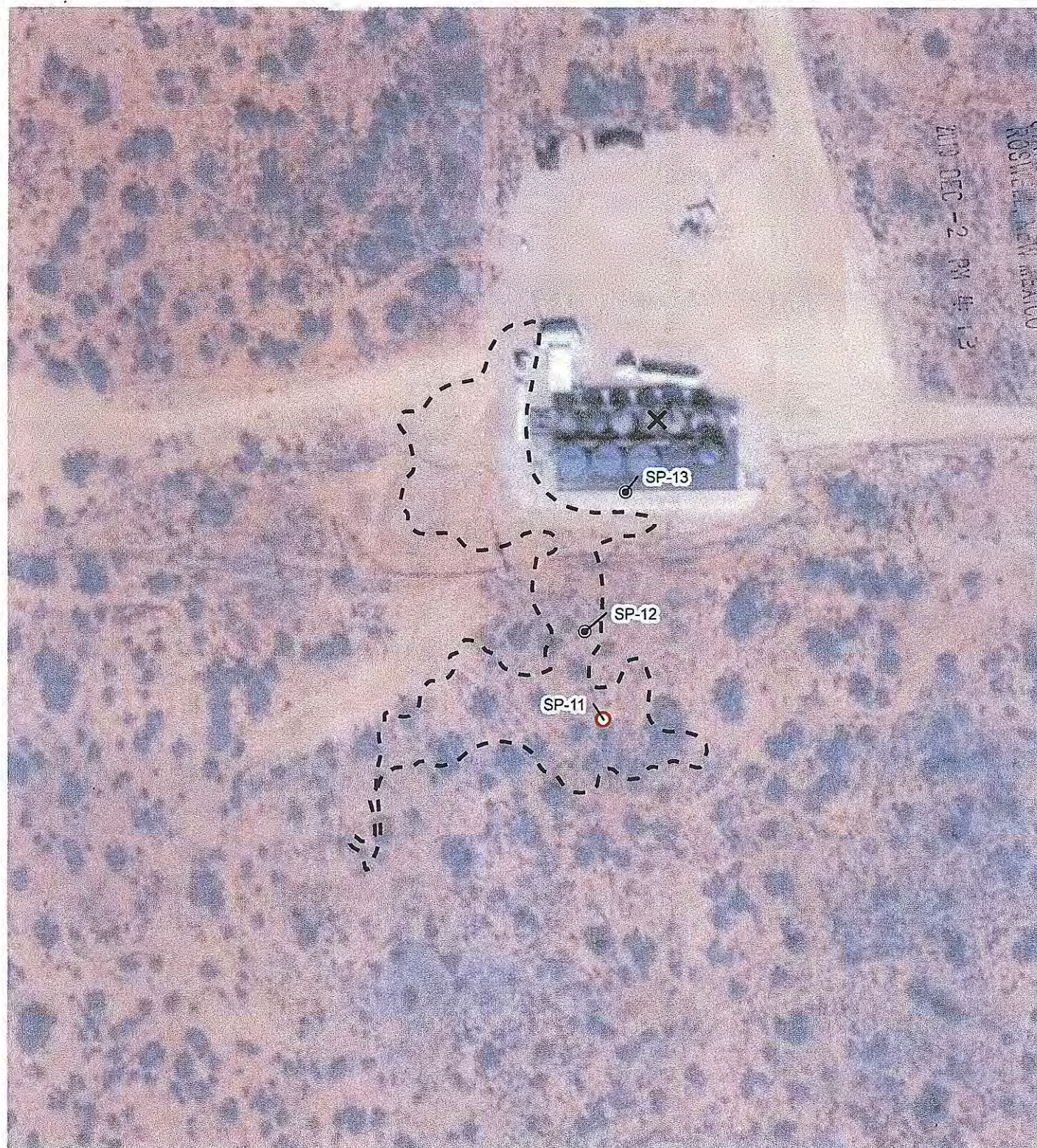
Juan Hernandez

Trn Desc: C 04387 POD1

File Number: C 04387

Trn Number: 663865

page: 3

**LEGEND**

- X** RELEASE LOCATION
- PROPOSED BORING
- PROPOSED MONITORING WELL

--- EXCAVATION EXTENT (4 FEET)

NOTE: REMEDIATION PERMIT NUMBERS
2RP-2726, 2RP-3082, 2RP-3302, 2RP-3726,
2RP-4040, & 2RP-4833

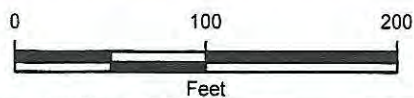


IMAGE COURTESY OF ESRI



FIGURE 1
PROPOSED BOREHOLE AND
MONITORING WELL LOCATIONS
JAMES RANCH UNIT 29 SWD
UNIT K SEC 36 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



John R. D Antonio, Jr., P.E.
State Engineer



Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

**STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER**

Trn Nbr: 663865
File Nbr: C 04387

Dec. 16, 2019

KYLE LITTRELL
XTO ENERGY INC
6401 HOLIDAY HILL ROAD
MIDLAND, TX 79707

Greetings:

Your approved copy of the above numbered permit to drill a well for non-consumptive purposes is enclosed. You must obtain an additional permit if you intend to use the water. It is your responsibility to provide the contracted well driller with a copy of the permit that must be made available during well drilling activities.

Carefully review the attached conditions of approval for all specific permit requirements.

- * If use of this well is temporary in nature and the well will be plugged at the end of the well usage, the OSE must initially approve of the plugging. If plugging approval is not conditioned in this permit, the applicant must submit a Plugging Plan of Operations for approval prior to the well being plugged. The Plugging Record must be properly completed and submitted to the OSE within 30 days of the well plugging.
- * If the final intended purpose and condition requires a well ID tag and meter installation, the applicant must immediately send a completed meter report form to this office.
- * The well record and log must be submitted within 30 days of the completion of the well or if the attempt was a dry hole.
- * This permit expires and will be cancelled if no well is drilled and/or a well log is not received by the date set forth in the conditions of approval.

Appropriate forms can be downloaded from the OSE website www.ose.state.nm.us.

Sincerely,

ba 
Juan Hernandez
(575) 622-6521

Enclosure

explore

John R. D Antonio, Jr., I
State Engineer



Well Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

**STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER**

Trn Nbr: 663865
File Nbr: C 04387

Dec. 16, 2019

AIMEE COLE
LT ENVIRONMENTAL INC
3300 NORTH A STREET
BLDG 1 #103
MIDLAND, TX 79707

Greetings:

Your approved copy of the above numbered permit to drill a well for non-consumptive purposes is enclosed. You must obtain an additional permit if you intend to use the water. It is your responsibility to provide the contracted well driller with a copy of the permit that must be made available during well drilling activities.

Carefully review the attached conditions of approval for all specific permit requirements.

- * If use of this well is temporary in nature and the well will be plugged at the end of the well usage, the OSE must initially approve of the plugging. If plugging approval is not conditioned in this permit, the applicant must submit a Plugging Plan of Operations for approval prior to the well being plugged. The Plugging Record must be properly completed and submitted to the OSE within 30 days of the well plugging.
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Appropriate forms can be downloaded from the OSE website www.ose.state.nm.us.

Sincerely,


Juan Hernandez
(575) 622-6521

Enclosure

explore

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH01 (C-04387)	Date: 1/18-1/21/20					
		Project Name: JRU 29	RP Number: 2RP-3302, 2RP-3726, 2RP-4040, 2RP-3082					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB, FS, WM	Method: Sonic Drill					
Lat/Long: 32.346278,-103.835913		Field Screening: NA	Hole Diameter: 6"					
Total Depth: 110'								
Comments: No field screenings, lithology remarks only								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D			N		0'	0'	CCHE	CALICHE, tan-off white, fill
					0.5'	0.5'	SP	SAND, dry, reddish brown, poorly graded, fine-very fine, soft no odor, no stain
D			N		5'	5'	CCHE	CALICHE, dry, tan-off white, few subangular gravel, trace fine sand, no odor, no stain
D			N		12.5'	12.5'	SP-SM	silty SAND, dry, reddish brown, poorly graded, fine grained, few tan-off white subangular gravel, no stain, no odor
D			N		23'	23'	ML-S	SILTSTONE, dry, reddish brown, moderately consolidated, 2mm caliche inclusions, trace off-white subangular gravel, no stain, no odor
D			N		37'	37'		moist
M			N		45'	45'		dry
D			N		58'	58'	CL-S	CLAYSTONE, dry, reddish brown, low plasticity, cohesive, well consolidated with some silty dolomite inclusions (1-2mm), no stain, no odor
D			N		102'	102'		moist
D			N		110'	110'		Total Depth 110 feet bgs



APPENDIX B

Photographic Log



Photographic Log

XTO Energy, Inc
James Ranch Unit 19 Battery
NAPP2317142256

Date & Time: Fri, Jul 07, 2023 at 09:50:00 MDT
Position: +032.346544° / -103.832423° (+1221.5ft)
Altitude: 3312ft (+9.8ft)
Datum: WGS-84
Azimuth Bearing: 304° N26E 007mils True (+16°)
Elevation Angle: +25.2°
Horizon Angle: +01.6°
Zoom: 0.5X
release point north view
Mariana O'Dell



Photograph 1 Date: 7/7/2023
Description: View of release point
View: North

Date & Time: Fri, Jul 07, 2023 at 09:52:46 MDT
Position: +032.346573° / -103.832429° (+15.1ft)
Altitude: 3315ft (+11.4ft)
Datum: WGS-84
Azimuth Bearing: 343° N15W 016mils True (+16°)
Elevation Angle: +26.3°
Horizon Angle: +03.1°
Zoom: 0.5X
release extent east area
Mariana O'Dell



Photograph 2 Date: 7/7/2023
Description: Eastern extent of surface release
View: Northwest

Date & Time: Thu, Jul 20, 2023 at 13:13:50 MDT
Position: +032.346550° / -103.832722° (+122.8ft)
Altitude: 3245ft (+22.4ft)
Datum: WGS-84
Azimuth Bearing: 302° N26E 002mils True (+16°)
Elevation Angle: +30.8°
Horizon Angle: +00.4°
Zoom: 0.5X
hand shovel activities
Mariana O'Dell



Photograph 3 Date: 7/20/2023
Description: Hand shovel and vacuum truck soil removal
View: North-Northeast

Date & Time: Thu, Jul 20, 2023 at 16:59:42 MDT
Position: +032.346581° / -103.832460° (+15.4ft)
Altitude: 3315ft (+11.4ft)
Datum: WGS-84
Azimuth Bearing: 351° N01E 020mils True (+16°)
Elevation Angle: +31.3°
Horizon Angle: +05.1°
Zoom: 0.5X
north view of area
Mariana O'Dell



Photograph 4 Date: 7/20/2023
Description: Final excavation extent
View: North



APPENDIX C

Laboratory Analytical Reports



Environment Testing

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

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JOB DESCRIPTION

James Ranch Unit 19 Battery

SDG NUMBER 03C1558256

JOB NUMBER

890-4915-1

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



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

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Laboratory Job ID: 890-4915-1
SDG: 03C1558256

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Definitions/Glossary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

Qualifiers

GC VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

Job ID: 890-4915-1

Laboratory: Eurofins Carlsbad

Narrative

**Job Narrative
890-4915-1**

Receipt

The samples were received on 7/7/2023 3:46 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 4.2°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: SS01 (890-4915-1), SS02 (890-4915-2), SS03 (890-4915-3), SS04 (890-4915-4), SS05 (890-4915-5) and SS06 (890-4915-6).

GC VOA

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-57381 recovered below the lower control limit for o-Xylene. An acceptable CCV was ran within the 12 hour window, therefore the data has been qualified and reported. The associated sample is impacted: (CCV 880-57381/20).

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-57416 and analytical batch 880-57381 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: The laboratory control sample (LCS) associated with preparation batch 880-57442 and analytical batch 880-57448 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 8021B: The continuing calibration verification (CCV) associated with batch 880-57448 recovered above the upper control limit for Benzene and Toluene. An acceptable CCV was ran within the 12 hour window; therefore, the data have been reported. The associated sample is impacted: (CCV 880-57448/20).

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 880-57501 and analytical batch 880-57664 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-57664/20) and (CCV 880-57664/5). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SS01 (890-4915-1), SS02 (890-4915-2), SS03 (890-4915-3), SS04 (890-4915-4), (890-4915-A-1-F MS) and (890-4915-A-1-G MSD). 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

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-57365 and analytical batch 880-57420 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

Client Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

Client Sample ID: SS01

Lab Sample ID: 890-4915-1

Date Collected: 07/07/23 09:00

Matrix: Solid

Date Received: 07/07/23 15:46

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		07/11/23 13:40	07/12/23 00:50	1
Toluene	<0.00198	U	0.00198	mg/Kg		07/11/23 13:40	07/12/23 00:50	1
Ethylbenzene	<0.00198	U F1	0.00198	mg/Kg		07/11/23 13:40	07/12/23 00:50	1
m-Xylene & p-Xylene	<0.00396	U F1	0.00396	mg/Kg		07/11/23 13:40	07/12/23 00:50	1
o-Xylene	<0.00198	U F1	0.00198	mg/Kg		07/11/23 13:40	07/12/23 00:50	1
Xylenes, Total	<0.00396	U F1	0.00396	mg/Kg		07/11/23 13:40	07/12/23 00:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		70 - 130	07/11/23 13:40	07/12/23 00:50	1
1,4-Difluorobenzene (Surr)	112		70 - 130	07/11/23 13:40	07/12/23 00:50	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			07/12/23 14:48	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	164		50.1	mg/Kg			07/14/23 17:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.1	U	50.1	mg/Kg		07/12/23 12:11	07/14/23 11:00	1
Diesel Range Organics (Over C10-C28)	164		50.1	mg/Kg		07/12/23 12:11	07/14/23 11:00	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		07/12/23 12:11	07/14/23 11:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	141	S1+	70 - 130	07/12/23 12:11	07/14/23 11:00	1
o-Terphenyl	117		70 - 130	07/12/23 12:11	07/14/23 11:00	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31700		250	mg/Kg			07/11/23 14:16	50

Client Sample ID: SS02

Lab Sample ID: 890-4915-2

Date Collected: 07/07/23 09:05

Matrix: Solid

Date Received: 07/07/23 15:46

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/11/23 13:40	07/12/23 01:11	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/11/23 13:40	07/12/23 01:11	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/11/23 13:40	07/12/23 01:11	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		07/11/23 13:40	07/12/23 01:11	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/11/23 13:40	07/12/23 01:11	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		07/11/23 13:40	07/12/23 01:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		70 - 130	07/11/23 13:40	07/12/23 01:11	1

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Client Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

Client Sample ID: SS02

Lab Sample ID: 890-4915-2

Date Collected: 07/07/23 09:05

Matrix: Solid

Date Received: 07/07/23 15:46

Sample Depth: 0.5

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	121		70 - 130	07/11/23 13:40	07/12/23 01:11	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			07/12/23 14:48	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.5	U	49.5	mg/Kg			07/14/23 17:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.5	U	49.5	mg/Kg		07/12/23 12:11	07/14/23 12:19	1
Diesel Range Organics (Over C10-C28)	<49.5	U	49.5	mg/Kg		07/12/23 12:11	07/14/23 12:19	1
Oil Range Organics (Over C28-C36)	<49.5	U	49.5	mg/Kg		07/12/23 12:11	07/14/23 12:19	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	137	S1+	70 - 130			07/12/23 12:11	07/14/23 12:19	1
o-Terphenyl	116		70 - 130			07/12/23 12:11	07/14/23 12:19	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17500		101	mg/Kg			07/11/23 14:22	20

Client Sample ID: SS03

Lab Sample ID: 890-4915-3

Date Collected: 07/07/23 10:20

Matrix: Solid

Date Received: 07/07/23 15:46

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/11/23 13:40	07/12/23 01:31	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/11/23 13:40	07/12/23 01:31	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/11/23 13:40	07/12/23 01:31	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		07/11/23 13:40	07/12/23 01:31	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/11/23 13:40	07/12/23 01:31	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		07/11/23 13:40	07/12/23 01:31	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130			07/11/23 13:40	07/12/23 01:31	1
1,4-Difluorobenzene (Surr)	109		70 - 130			07/11/23 13:40	07/12/23 01:31	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			07/12/23 14:48	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			07/14/23 17:31	1

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Client Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

Client Sample ID: SS03

Lab Sample ID: 890-4915-3

Date Collected: 07/07/23 10:20

Matrix: Solid

Date Received: 07/07/23 15:46

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		07/12/23 12:11	07/14/23 12:41	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		07/12/23 12:11	07/14/23 12:41	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		07/12/23 12:11	07/14/23 12:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	132	S1+	70 - 130			07/12/23 12:11	07/14/23 12:41	1
o-Terphenyl	112		70 - 130			07/12/23 12:11	07/14/23 12:41	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	154		4.97	mg/Kg			07/11/23 14:40	1

Client Sample ID: SS04

Lab Sample ID: 890-4915-4

Date Collected: 07/07/23 10:05

Matrix: Solid

Date Received: 07/07/23 15:46

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		07/11/23 13:40	07/12/23 01:51	1
Toluene	<0.00202	U	0.00202	mg/Kg		07/11/23 13:40	07/12/23 01:51	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		07/11/23 13:40	07/12/23 01:51	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		07/11/23 13:40	07/12/23 01:51	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		07/11/23 13:40	07/12/23 01:51	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		07/11/23 13:40	07/12/23 01:51	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		70 - 130			07/11/23 13:40	07/12/23 01:51	1
1,4-Difluorobenzene (Surr)	118		70 - 130			07/11/23 13:40	07/12/23 01:51	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			07/12/23 14:48	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	135		50.4	mg/Kg			07/14/23 17:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.4	U	50.4	mg/Kg		07/12/23 12:11	07/14/23 13:02	1
Diesel Range Organics (Over C10-C28)	135		50.4	mg/Kg		07/12/23 12:11	07/14/23 13:02	1
Oil Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		07/12/23 12:11	07/14/23 13:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	141	S1+	70 - 130			07/12/23 12:11	07/14/23 13:02	1
o-Terphenyl	118		70 - 130			07/12/23 12:11	07/14/23 13:02	1

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Client Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

Client Sample ID: SS04

Lab Sample ID: 890-4915-4

Date Collected: 07/07/23 10:05

Matrix: Solid

Date Received: 07/07/23 15:46

Sample Depth: 0.5

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	52.2		4.96	mg/Kg			07/11/23 14:46	1

Client Sample ID: SS05

Lab Sample ID: 890-4915-5

Date Collected: 07/07/23 09:50

Matrix: Solid

Date Received: 07/07/23 15:46

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/11/23 13:40	07/12/23 02:12	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/11/23 13:40	07/12/23 02:12	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/11/23 13:40	07/12/23 02:12	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		07/11/23 13:40	07/12/23 02:12	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/11/23 13:40	07/12/23 02:12	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		07/11/23 13:40	07/12/23 02:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		70 - 130			07/11/23 13:40	07/12/23 02:12	1
1,4-Difluorobenzene (Surr)	108		70 - 130			07/11/23 13:40	07/12/23 02:12	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			07/12/23 14:48	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			07/14/23 17:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/12/23 12:11	07/14/23 13:32	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/12/23 12:11	07/14/23 13:32	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/12/23 12:11	07/14/23 13:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	119		70 - 130			07/12/23 12:11	07/14/23 13:32	1
o-Terphenyl	101		70 - 130			07/12/23 12:11	07/14/23 13:32	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34.3		5.01	mg/Kg			07/11/23 14:52	1

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Client Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

Client Sample ID: SS06

Lab Sample ID: 890-4915-6

Date Collected: 07/07/23 09:55

Matrix: Solid

Date Received: 07/07/23 15:46

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		07/12/23 08:12	07/12/23 14:39	1
Toluene	<0.00201	U *	0.00201	mg/Kg		07/12/23 08:12	07/12/23 14:39	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		07/12/23 08:12	07/12/23 14:39	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		07/12/23 08:12	07/12/23 14:39	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		07/12/23 08:12	07/12/23 14:39	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		07/12/23 08:12	07/12/23 14:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		70 - 130	07/12/23 08:12	07/12/23 14:39	1
1,4-Difluorobenzene (Surr)	109		70 - 130	07/12/23 08:12	07/12/23 14:39	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			07/13/23 10:17	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	79.9		49.8	mg/Kg			07/14/23 17:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		07/12/23 12:11	07/14/23 13:53	1
Diesel Range Organics (Over C10-C28)	79.9		49.8	mg/Kg		07/12/23 12:11	07/14/23 13:53	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		07/12/23 12:11	07/14/23 13:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		70 - 130	07/12/23 12:11	07/14/23 13:53	1
o-Terphenyl	81		70 - 130	07/12/23 12:11	07/14/23 13:53	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	49.7		5.03	mg/Kg			07/11/23 14:58	1

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Surrogate Summary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-30598-A-1-A MS	Matrix Spike	110	103
880-30598-A-1-B MSD	Matrix Spike Duplicate	108	108
890-4915-1	SS01	74	112
890-4915-1 MS	SS01	88	110
890-4915-1 MSD	SS01	90	106
890-4915-2	SS02	92	121
890-4915-3	SS03	85	109
890-4915-4	SS04	83	118
890-4915-5	SS05	82	108
890-4915-6	SS06	110	109
LCS 880-57416/1-A	Lab Control Sample	91	100
LCS 880-57442/1-A	Lab Control Sample	108	103
LCSD 880-57416/2-A	Lab Control Sample Dup	89	105
LCSD 880-57442/2-A	Lab Control Sample Dup	113	103
MB 880-57324/5-A	Method Blank	97	120
MB 880-57416/5-A	Method Blank	98	119
MB 880-57442/5-A	Method Blank	89	97
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-4915-1	SS01	141 S1+	117
890-4915-1 MS	SS01	140 S1+	103
890-4915-1 MSD	SS01	124	89
890-4915-2	SS02	137 S1+	116
890-4915-3	SS03	132 S1+	112
890-4915-4	SS04	141 S1+	118
890-4915-5	SS05	119	101
890-4915-6	SS06	98	81
LCS 880-57501/2-A	Lab Control Sample	106	92
LCSD 880-57501/3-A	Lab Control Sample Dup	103	91
MB 880-57501/1-A	Method Blank	146 S1+	122
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-57324/5-A

Matrix: Solid

Analysis Batch: 57381

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 57324

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/10/23 14:17	07/11/23 12:23	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/10/23 14:17	07/11/23 12:23	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/10/23 14:17	07/11/23 12:23	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/10/23 14:17	07/11/23 12:23	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/10/23 14:17	07/11/23 12:23	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/10/23 14:17	07/11/23 12:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130	07/10/23 14:17	07/11/23 12:23	1
1,4-Difluorobenzene (Surr)	120		70 - 130	07/10/23 14:17	07/11/23 12:23	1

Lab Sample ID: MB 880-57416/5-A

Matrix: Solid

Analysis Batch: 57381

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 57416

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/11/23 13:40	07/12/23 00:21	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/11/23 13:40	07/12/23 00:21	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/11/23 13:40	07/12/23 00:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/11/23 13:40	07/12/23 00:21	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/11/23 13:40	07/12/23 00:21	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/11/23 13:40	07/12/23 00:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 130	07/11/23 13:40	07/12/23 00:21	1
1,4-Difluorobenzene (Surr)	119		70 - 130	07/11/23 13:40	07/12/23 00:21	1

Lab Sample ID: LCS 880-57416/1-A

Matrix: Solid

Analysis Batch: 57381

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 57416

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09913		mg/Kg		99	70 - 130
Toluene	0.100	0.1184		mg/Kg		118	70 - 130
Ethylbenzene	0.100	0.09377		mg/Kg		94	70 - 130
m-Xylene & p-Xylene	0.200	0.1784		mg/Kg		89	70 - 130
o-Xylene	0.100	0.08677		mg/Kg		87	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	91		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: LCSD 880-57416/2-A

Matrix: Solid

Analysis Batch: 57381

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 57416

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1034		mg/Kg		103	70 - 130	4	35

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QC Sample Results

Client: Ensolum

Job ID: 890-4915-1

Project/Site: James Ranch Unit 19 Battery

SDG: 03C1558256

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

Lab Sample ID: LCSD 880-57416/2-A

Matrix: Solid

Analysis Batch: 57381

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 57416

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD
							Limits		Limit
Toluene	0.100	0.1128		mg/Kg		113	70 - 130	5	35
Ethylbenzene	0.100	0.08936		mg/Kg		89	70 - 130	5	35
m-Xylene & p-Xylene	0.200	0.1669		mg/Kg		83	70 - 130	7	35
o-Xylene	0.100	0.08307		mg/Kg		83	70 - 130	4	35

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	89		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

Lab Sample ID: 890-4915-1 MS

Matrix: Solid

Analysis Batch: 57381

Client Sample ID: SS01

Prep Type: Total/NA

Prep Batch: 57416

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	
Benzene	<0.00198	U	0.0994	0.09105		mg/Kg		92	70 - 130	
Toluene	<0.00198	U	0.0994	0.08376		mg/Kg		84	70 - 130	
Ethylbenzene	<0.00198	U F1	0.0994	0.05554	F1	mg/Kg		56	70 - 130	
m-Xylene & p-Xylene	<0.00396	U F1	0.199	0.1070	F1	mg/Kg		54	70 - 130	
o-Xylene	<0.00198	U F1	0.0994	0.05366	F1	mg/Kg		54	70 - 130	

Surrogate	MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	88		70 - 130
1,4-Difluorobenzene (Surr)	110		70 - 130

Lab Sample ID: 890-4915-1 MSD

Matrix: Solid

Analysis Batch: 57381

Client Sample ID: SS01

Prep Type: Total/NA

Prep Batch: 57416

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec		RPD
									Limits		Limit
Benzene	<0.00198	U	0.0998	0.09469		mg/Kg		95	70 - 130	4	35
Toluene	<0.00198	U	0.0998	0.08974		mg/Kg		90	70 - 130	7	35
Ethylbenzene	<0.00198	U F1	0.0998	0.06132	F1	mg/Kg		61	70 - 130	10	35
m-Xylene & p-Xylene	<0.00396	U F1	0.200	0.1226	F1	mg/Kg		61	70 - 130	14	35
o-Xylene	<0.00198	U F1	0.0998	0.06110	F1	mg/Kg		61	70 - 130	13	35

Surrogate	MSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	90		70 - 130
1,4-Difluorobenzene (Surr)	106		70 - 130

Lab Sample ID: MB 880-57442/5-A

Matrix: Solid

Analysis Batch: 57448

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 57442

Analyte	MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		07/12/23 08:12	07/12/23 11:31	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/12/23 08:12	07/12/23 11:31	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/12/23 08:12	07/12/23 11:31	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/12/23 08:12	07/12/23 11:31	1

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QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

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

Lab Sample ID: MB 880-57442/5-A

Matrix: Solid

Analysis Batch: 57448

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 57442

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/12/23 08:12	07/12/23 11:31	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/12/23 08:12	07/12/23 11:31	1
Surrogate	MB	MB	Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
4-Bromofluorobenzene (Surr)	89		70 - 130			07/12/23 08:12	07/12/23 11:31	1
1,4-Difluorobenzene (Surr)	97		70 - 130			07/12/23 08:12	07/12/23 11:31	1

Lab Sample ID: LCS 880-57442/1-A

Matrix: Solid

Analysis Batch: 57448

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 57442

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits	
		Result	Qualifier					
Benzene	0.100	0.1191		mg/Kg		119	70 - 130	
Toluene	0.100	0.1324	*+	mg/Kg		132	70 - 130	
Ethylbenzene	0.100	0.1222		mg/Kg		122	70 - 130	
m-Xylene & p-Xylene	0.200	0.2577		mg/Kg		129	70 - 130	
o-Xylene	0.100	0.1213		mg/Kg		121	70 - 130	
Surrogate	LCS	LCS	Limits			%Recovery	Qualifier	
	%Recovery	Qualifier						
4-Bromofluorobenzene (Surr)	108		70 - 130					
1,4-Difluorobenzene (Surr)	103		70 - 130					

Lab Sample ID: LCSD 880-57442/2-A

Matrix: Solid

Analysis Batch: 57448

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 57442

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
		Result	Qualifier						
Benzene	0.100	0.1159		mg/Kg		116	70 - 130	3	35
Toluene	0.100	0.1296		mg/Kg		130	70 - 130	2	35
Ethylbenzene	0.100	0.1194		mg/Kg		119	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.2531		mg/Kg		127	70 - 130	2	35
o-Xylene	0.100	0.1201		mg/Kg		120	70 - 130	1	35
Surrogate	LCSD	LCSD	Limits			%Recovery	Qualifier		
	%Recovery	Qualifier							
4-Bromofluorobenzene (Surr)	113		70 - 130						
1,4-Difluorobenzene (Surr)	103		70 - 130						

Lab Sample ID: 880-30598-A-1-A MS

Matrix: Solid

Analysis Batch: 57448

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 57442

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits	
	Result	Qualifier		Result	Qualifier					
Benzene	<0.00201	U	0.0994	0.08092		mg/Kg		81	70 - 130	
Toluene	<0.00201	U *	0.0994	0.09383		mg/Kg		94	70 - 130	
Ethylbenzene	<0.00201	U	0.0994	0.08774		mg/Kg		88	70 - 130	
m-Xylene & p-Xylene	<0.00402	U	0.199	0.1831		mg/Kg		92	70 - 130	
o-Xylene	<0.00201	U	0.0994	0.08997		mg/Kg		91	70 - 130	

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QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

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

Lab Sample ID: 880-30598-A-1-A MS

Matrix: Solid

Analysis Batch: 57448

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 57442

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	110		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

Lab Sample ID: 880-30598-A-1-B MSD

Matrix: Solid

Analysis Batch: 57448

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 57442

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0990	0.1020		mg/Kg		103	70 - 130	23	35
Toluene	<0.00201	U *	0.0990	0.1089		mg/Kg		110	70 - 130	15	35
Ethylbenzene	<0.00201	U	0.0990	0.09762		mg/Kg		99	70 - 130	11	35
m-Xylene & p-Xylene	<0.00402	U	0.198	0.1984		mg/Kg		100	70 - 130	8	35
o-Xylene	<0.00201	U	0.0990	0.09622		mg/Kg		97	70 - 130	7	35

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

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

Lab Sample ID: MB 880-57501/1-A

Matrix: Solid

Analysis Batch: 57664

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 57501

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/12/23 12:11	07/14/23 07:48	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/12/23 12:11	07/14/23 07:48	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/12/23 12:11	07/14/23 07:48	1

	MB	MB						
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
1-Chlorooctane	146	S1+	70 - 130	07/12/23 12:11	07/14/23 07:48	1		
o-Terphenyl	122		70 - 130	07/12/23 12:11	07/14/23 07:48	1		

Lab Sample ID: LCS 880-57501/2-A

Matrix: Solid

Analysis Batch: 57664

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 57501

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	1000	1156		mg/Kg		116	70 - 130		
Diesel Range Organics (Over C10-C28)	1000	990.1		mg/Kg		99	70 - 130		

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	106		70 - 130
o-Terphenyl	92		70 - 130

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QC Sample Results

Client: Ensolum

Job ID: 890-4915-1

Project/Site: James Ranch Unit 19 Battery

SDG: 03C1558256

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

Lab Sample ID: LCSD 880-57501/3-A

Matrix: Solid

Analysis Batch: 57664

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 57501

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1034		mg/Kg		103	70 - 130	11	20
Diesel Range Organics (Over C10-C28)	1000	873.4		mg/Kg		87	70 - 130	13	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	103		70 - 130						
o-Terphenyl	91		70 - 130						

Lab Sample ID: 890-4915-1 MS

Matrix: Solid

Analysis Batch: 57664

Client Sample ID: SS01

Prep Type: Total/NA

Prep Batch: 57501

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.1	U	1000	1142		mg/Kg		110	70 - 130		
Diesel Range Organics (Over C10-C28)	164		1000	1252		mg/Kg		108	70 - 130		
Surrogate	MS %Recovery	MS Qualifier	Limits								
1-Chlorooctane	140	S1+	70 - 130								
o-Terphenyl	103		70 - 130								

Lab Sample ID: 890-4915-1 MSD

Matrix: Solid

Analysis Batch: 57664

Client Sample ID: SS01

Prep Type: Total/NA

Prep Batch: 57501

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.1	U	999	1002		mg/Kg		97	70 - 130	13	20
Diesel Range Organics (Over C10-C28)	164		999	1081		mg/Kg		92	70 - 130	15	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	124		70 - 130								
o-Terphenyl	89		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-57365/1-A

Matrix: Solid

Analysis Batch: 57420

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			07/11/23 13:27	1

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QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-57365/2-A

Matrix: Solid

Analysis Batch: 57420

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	246.6		mg/Kg		99	90 - 110		

Lab Sample ID: LCSD 880-57365/3-A

Matrix: Solid

Analysis Batch: 57420

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	246.5		mg/Kg		99	90 - 110	0	20

Lab Sample ID: 890-4914-A-15-B MS

Matrix: Solid

Analysis Batch: 57420

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	102	F1	250	323.7	F1	mg/Kg		89	90 - 110		

Lab Sample ID: 890-4914-A-15-C MSD

Matrix: Solid

Analysis Batch: 57420

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	102	F1	250	322.5	F1	mg/Kg		88	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

GC VOA

Prep Batch: 57324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-57324/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 57381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4915-1	SS01	Total/NA	Solid	8021B	57416
890-4915-2	SS02	Total/NA	Solid	8021B	57416
890-4915-3	SS03	Total/NA	Solid	8021B	57416
890-4915-4	SS04	Total/NA	Solid	8021B	57416
890-4915-5	SS05	Total/NA	Solid	8021B	57416
MB 880-57324/5-A	Method Blank	Total/NA	Solid	8021B	57324
MB 880-57416/5-A	Method Blank	Total/NA	Solid	8021B	57416
LCS 880-57416/1-A	Lab Control Sample	Total/NA	Solid	8021B	57416
LCSD 880-57416/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	57416
890-4915-1 MS	SS01	Total/NA	Solid	8021B	57416
890-4915-1 MSD	SS01	Total/NA	Solid	8021B	57416

Prep Batch: 57416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4915-1	SS01	Total/NA	Solid	5035	
890-4915-2	SS02	Total/NA	Solid	5035	
890-4915-3	SS03	Total/NA	Solid	5035	
890-4915-4	SS04	Total/NA	Solid	5035	
890-4915-5	SS05	Total/NA	Solid	5035	
MB 880-57416/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-57416/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-57416/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4915-1 MS	SS01	Total/NA	Solid	5035	
890-4915-1 MSD	SS01	Total/NA	Solid	5035	

Prep Batch: 57442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4915-6	SS06	Total/NA	Solid	5035	
MB 880-57442/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-57442/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-57442/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-30598-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-30598-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 57448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4915-6	SS06	Total/NA	Solid	8021B	57442
MB 880-57442/5-A	Method Blank	Total/NA	Solid	8021B	57442
LCS 880-57442/1-A	Lab Control Sample	Total/NA	Solid	8021B	57442
LCSD 880-57442/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	57442
880-30598-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	57442
880-30598-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	57442

Analysis Batch: 57520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4915-1	SS01	Total/NA	Solid	Total BTEX	
890-4915-2	SS02	Total/NA	Solid	Total BTEX	

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QC Association Summary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

GC VOA (Continued)

Analysis Batch: 57520 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4915-3	SS03	Total/NA	Solid	Total BTEX	
890-4915-4	SS04	Total/NA	Solid	Total BTEX	
890-4915-5	SS05	Total/NA	Solid	Total BTEX	
890-4915-6	SS06	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 57501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4915-1	SS01	Total/NA	Solid	8015NM Prep	
890-4915-2	SS02	Total/NA	Solid	8015NM Prep	
890-4915-3	SS03	Total/NA	Solid	8015NM Prep	
890-4915-4	SS04	Total/NA	Solid	8015NM Prep	
890-4915-5	SS05	Total/NA	Solid	8015NM Prep	
890-4915-6	SS06	Total/NA	Solid	8015NM Prep	
MB 880-57501/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-57501/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-57501/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4915-1 MS	SS01	Total/NA	Solid	8015NM Prep	
890-4915-1 MSD	SS01	Total/NA	Solid	8015NM Prep	

Analysis Batch: 57664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4915-1	SS01	Total/NA	Solid	8015B NM	57501
890-4915-2	SS02	Total/NA	Solid	8015B NM	57501
890-4915-3	SS03	Total/NA	Solid	8015B NM	57501
890-4915-4	SS04	Total/NA	Solid	8015B NM	57501
890-4915-5	SS05	Total/NA	Solid	8015B NM	57501
890-4915-6	SS06	Total/NA	Solid	8015B NM	57501
MB 880-57501/1-A	Method Blank	Total/NA	Solid	8015B NM	57501
LCS 880-57501/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	57501
LCSD 880-57501/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	57501
890-4915-1 MS	SS01	Total/NA	Solid	8015B NM	57501
890-4915-1 MSD	SS01	Total/NA	Solid	8015B NM	57501

Analysis Batch: 57737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4915-1	SS01	Total/NA	Solid	8015 NM	
890-4915-2	SS02	Total/NA	Solid	8015 NM	
890-4915-3	SS03	Total/NA	Solid	8015 NM	
890-4915-4	SS04	Total/NA	Solid	8015 NM	
890-4915-5	SS05	Total/NA	Solid	8015 NM	
890-4915-6	SS06	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 57365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4915-1	SS01	Soluble	Solid	DI Leach	
890-4915-2	SS02	Soluble	Solid	DI Leach	
890-4915-3	SS03	Soluble	Solid	DI Leach	
890-4915-4	SS04	Soluble	Solid	DI Leach	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

HPLC/IC (Continued)

Leach Batch: 57365 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4915-5	SS05	Soluble	Solid	DI Leach	
890-4915-6	SS06	Soluble	Solid	DI Leach	
MB 880-57365/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-57365/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-57365/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4914-A-15-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-4914-A-15-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 57420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4915-1	SS01	Soluble	Solid	300.0	57365
890-4915-2	SS02	Soluble	Solid	300.0	57365
890-4915-3	SS03	Soluble	Solid	300.0	57365
890-4915-4	SS04	Soluble	Solid	300.0	57365
890-4915-5	SS05	Soluble	Solid	300.0	57365
890-4915-6	SS06	Soluble	Solid	300.0	57365
MB 880-57365/1-A	Method Blank	Soluble	Solid	300.0	57365
LCS 880-57365/2-A	Lab Control Sample	Soluble	Solid	300.0	57365
LCSD 880-57365/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	57365
890-4914-A-15-B MS	Matrix Spike	Soluble	Solid	300.0	57365
890-4914-A-15-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	57365

Lab Chronicle

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

Client Sample ID: SS01

Date Collected: 07/07/23 09:00

Date Received: 07/07/23 15:46

Lab Sample ID: 890-4915-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	57416	07/11/23 13:40	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	57381	07/12/23 00:50	SM	EET MID
Total/NA	Analysis	Total BTEX		1			57520	07/12/23 14:48	SM	EET MID
Total/NA	Analysis	8015 NM		1			57737	07/14/23 17:31	SM	EET MID
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	57501	07/12/23 12:11	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	57664	07/14/23 11:00	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	57365	07/11/23 12:00	KS	EET MID
Soluble	Analysis	300.0		50			57420	07/11/23 14:16	CH	EET MID

Client Sample ID: SS02

Date Collected: 07/07/23 09:05

Date Received: 07/07/23 15:46

Lab Sample ID: 890-4915-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	57416	07/11/23 13:40	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	57381	07/12/23 01:11	SM	EET MID
Total/NA	Analysis	Total BTEX		1			57520	07/12/23 14:48	SM	EET MID
Total/NA	Analysis	8015 NM		1			57737	07/14/23 17:31	SM	EET MID
Total/NA	Prep	8015NM Prep			10.10 g	10 mL	57501	07/12/23 12:11	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	57664	07/14/23 12:19	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	57365	07/11/23 12:00	KS	EET MID
Soluble	Analysis	300.0		20			57420	07/11/23 14:22	CH	EET MID

Client Sample ID: SS03

Date Collected: 07/07/23 10:20

Date Received: 07/07/23 15:46

Lab Sample ID: 890-4915-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	57416	07/11/23 13:40	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	57381	07/12/23 01:31	SM	EET MID
Total/NA	Analysis	Total BTEX		1			57520	07/12/23 14:48	SM	EET MID
Total/NA	Analysis	8015 NM		1			57737	07/14/23 17:31	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	57501	07/12/23 12:11	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	57664	07/14/23 12:41	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	57365	07/11/23 12:00	KS	EET MID
Soluble	Analysis	300.0		1			57420	07/11/23 14:40	CH	EET MID

Client Sample ID: SS04

Date Collected: 07/07/23 10:05

Date Received: 07/07/23 15:46

Lab Sample ID: 890-4915-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	57416	07/11/23 13:40	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	57381	07/12/23 01:51	SM	EET MID
Total/NA	Analysis	Total BTEX		1			57520	07/12/23 14:48	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

Client Sample ID: SS04

Date Collected: 07/07/23 10:05

Date Received: 07/07/23 15:46

Lab Sample ID: 890-4915-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			57737	07/14/23 17:31	SM	EET MID
Total/NA	Prep	8015NM Prep			9.93 g	10 mL	57501	07/12/23 12:11	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	57664	07/14/23 13:02	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	57365	07/11/23 12:00	KS	EET MID
Soluble	Analysis	300.0		1			57420	07/11/23 14:46	CH	EET MID

Client Sample ID: SS05

Date Collected: 07/07/23 09:50

Date Received: 07/07/23 15:46

Lab Sample ID: 890-4915-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	57416	07/11/23 13:40	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	57381	07/12/23 02:12	SM	EET MID
Total/NA	Analysis	Total BTEX		1			57520	07/12/23 14:48	SM	EET MID
Total/NA	Analysis	8015 NM		1			57737	07/14/23 17:31	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	57501	07/12/23 12:11	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	57664	07/14/23 13:32	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	57365	07/11/23 12:00	KS	EET MID
Soluble	Analysis	300.0		1			57420	07/11/23 14:52	CH	EET MID

Client Sample ID: SS06

Date Collected: 07/07/23 09:55

Date Received: 07/07/23 15:46

Lab Sample ID: 890-4915-6

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	57442	07/12/23 08:12	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	57448	07/12/23 14:39	SM	EET MID
Total/NA	Analysis	Total BTEX		1			57520	07/13/23 10:17	SM	EET MID
Total/NA	Analysis	8015 NM		1			57737	07/14/23 17:31	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	57501	07/12/23 12:11	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	57664	07/14/23 13:53	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	57365	07/11/23 12:00	KS	EET MID
Soluble	Analysis	300.0		1			57420	07/11/23 14:58	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: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

- 1
- 2
- 3
- 4
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Method Summary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

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: James Ranch Unit 19 Battery

Job ID: 890-4915-1
SDG: 03C1558256

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4915-1	SS01	Solid	07/07/23 09:00	07/07/23 15:46	0.5
890-4915-2	SS02	Solid	07/07/23 09:05	07/07/23 15:46	0.5
890-4915-3	SS03	Solid	07/07/23 10:20	07/07/23 15:46	0.5
890-4915-4	SS04	Solid	07/07/23 10:05	07/07/23 15:46	0.5
890-4915-5	SS05	Solid	07/07/23 09:50	07/07/23 15:46	0.5
890-4915-6	SS06	Solid	07/07/23 09:55	07/07/23 15:46	0.5

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Environment Testing
Xenco

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

Chain of Custody

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Ben Bellill	Bill to: (if different)	Barrett Green
Company Name:	ENSOLUM, LLC	Company Name:	XTO Energy
Address:	3722 National Parks Hwy	Address:	3104 E. Greene St
City/State/Zip:	Carlsbad, NM 88220	City/State/Zip:	Carlsbad, NM 88220
Phone:	989-854-0852	Email:	Barrett.Green@XxonMobil.com

Work Order Comments			
Program:	UST/PST ☐ PRP ☐	Brownfields ☐ RRC ☐	Superfund ☐
State of Project:			
Reporting:	Level II ☐ Level III ☐	PST/UST ☐ TRRP ☐	Level IV ☐
Deliverables:	EDD ☐ ADAPT ☐	Other: _____	

Project Name:	James Ranch Unit 19 Battery	Turn Around	
Project Number:	03C1558256	☒ Routine ☐ Rush	Pres. Code
Project Location:	32-34Wue, -103 83240	Due Date:	5 days
Sampler's Name:	Margina O'Dell	TAT starts the day received by the lab, if received by 4:30pm	
P.O. #:			
SAMPLE RECEIPT	Temp Blank: ☒ Yes ☒ No	Well: ☒ Yes ☒ No	Parameters
Samples Received Inact:	Yes ☒ No ☒	Thermometer ID:	11111111
Cooler Custody Seals:	Yes ☒ No ☒	Correction Factor:	-0.2
Sample Custody Seals:	Yes ☒ No ☒	Temperature Reading:	4.4
Total Containers:		Corrected Temperature:	4.2



890-4915 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Gab/Comp	# of Cont	TPH	BTEX	Ch										Sample Comments
SS01	S	7/7/23	9:00	0.5'	G	1	X	X	X										Incident # NAPD231114256
SS02	S		9:05	0.5'															
SS03	S		10:20	0.5'															Cost Center:
SS04	S		10:05	0.5'															10B0931001
SS05	S		9:50	0.5'															
SS06	S		9:55	0.5'															Ben Bellill: bbellill@ensolum.com

Total 200.7 / 6010 2008 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>M. Ornela</i>	<i>Joe Corp</i>	7.7.23 1546			
3					
5					

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4915-1

SDG Number: 03C1558256

Login Number: 4915

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4915-1

SDG Number: 03C1558256

Login Number: 4915

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 07/11/23 11:07 AM

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



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 8/2/2023 10:34:34 AM

JOB DESCRIPTION

James Ranch Unit 19 Battery

SDG NUMBER 03C1558256

JOB NUMBER

890-4972-1

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



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Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Laboratory Job ID: 890-4972-1
SDG: 03C1558256

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Definitions/Glossary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4972-1
SDG: 03C1558256

Qualifiers

GC VOA

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

GC Semi VOA

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

Case Narrative

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4972-1
SDG: 03C1558256

Job ID: 890-4972-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-4972-1****Receipt**

The samples were received on 7/20/2023 3:58 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 0.8°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: BH01 (890-4972-1), BH02 (890-4972-2), SS07 (890-4972-3) and FS01 (890-4972-4).

GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: (CCV 880-58416/33). Evidence of matrix interferences is not obvious.

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-58416 recovered above the upper control limit for Ethylbenzene, m-Xylene & p-Xylene and o-Xylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 880-58416/33).

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 880-58634 and analytical batch 880-58963 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: Surrogate recovery for the following samples were outside control limits: SS07 (890-4972-3) and (890-4969-A-3-D). 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 880-58383 and analytical batch 880-58469 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

Client Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4972-1
SDG: 03C1558256

Client Sample ID: BH01

Lab Sample ID: 890-4972-1

Date Collected: 07/20/23 09:05

Matrix: Solid

Date Received: 07/20/23 15:58

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:51	07/26/23 06:34	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:51	07/26/23 06:34	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:51	07/26/23 06:34	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/25/23 13:51	07/26/23 06:34	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:51	07/26/23 06:34	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/25/23 13:51	07/26/23 06:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	126		70 - 130	07/25/23 13:51	07/26/23 06:34	1
1,4-Difluorobenzene (Surr)	106		70 - 130	07/25/23 13:51	07/26/23 06:34	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			07/26/23 09:30	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	50.7		50.5	mg/Kg			08/02/23 10:27	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.5	U	50.5	mg/Kg		07/27/23 08:51	08/01/23 13:41	1
Diesel Range Organics (Over C10-C28)	50.7	*-	50.5	mg/Kg		07/27/23 08:51	08/01/23 13:41	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		07/27/23 08:51	08/01/23 13:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	111		70 - 130	07/27/23 08:51	08/01/23 13:41	1
o-Terphenyl	126		70 - 130	07/27/23 08:51	08/01/23 13:41	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	389	F1	4.99	mg/Kg			07/25/23 14:46	1

Client Sample ID: BH02

Lab Sample ID: 890-4972-2

Date Collected: 07/20/23 09:45

Matrix: Solid

Date Received: 07/20/23 15:58

Sample Depth: 2

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:51	07/26/23 06:54	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:51	07/26/23 06:54	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:51	07/26/23 06:54	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		07/25/23 13:51	07/26/23 06:54	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:51	07/26/23 06:54	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		07/25/23 13:51	07/26/23 06:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	122		70 - 130	07/25/23 13:51	07/26/23 06:54	1

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Client Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4972-1
SDG: 03C1558256

Client Sample ID: BH02

Lab Sample ID: 890-4972-2

Date Collected: 07/20/23 09:45

Matrix: Solid

Date Received: 07/20/23 15:58

Sample Depth: 2

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	107		70 - 130	07/25/23 13:51	07/26/23 06:54	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			07/26/23 09:30	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3	mg/Kg			08/02/23 10:27	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	50.3	mg/Kg		07/27/23 08:51	08/01/23 14:03	1
Diesel Range Organics (Over C10-C28)	<50.3	U *	50.3	mg/Kg		07/27/23 08:51	08/01/23 14:03	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		07/27/23 08:51	08/01/23 14:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	107		70 - 130			07/27/23 08:51	08/01/23 14:03	1
o-Terphenyl	115		70 - 130			07/27/23 08:51	08/01/23 14:03	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	92.6		5.00	mg/Kg			07/25/23 15:01	1

Client Sample ID: SS07

Lab Sample ID: 890-4972-3

Date Collected: 07/20/23 10:30

Matrix: Solid

Date Received: 07/20/23 15:58

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		07/25/23 13:51	07/26/23 07:15	1
Toluene	<0.00201	U	0.00201	mg/Kg		07/25/23 13:51	07/26/23 07:15	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		07/25/23 13:51	07/26/23 07:15	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		07/25/23 13:51	07/26/23 07:15	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		07/25/23 13:51	07/26/23 07:15	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		07/25/23 13:51	07/26/23 07:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	116		70 - 130	07/25/23 13:51	07/26/23 07:15	1
1,4-Difluorobenzene (Surr)	107		70 - 130	07/25/23 13:51	07/26/23 07:15	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			07/26/23 09:30	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.2	U	50.2	mg/Kg			08/02/23 10:27	1

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Client Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4972-1
SDG: 03C1558256

Client Sample ID: SS07

Lab Sample ID: 890-4972-3

Date Collected: 07/20/23 10:30

Matrix: Solid

Date Received: 07/20/23 15:58

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.2	U	50.2	mg/Kg		07/27/23 08:51	08/01/23 14:26	1
Diesel Range Organics (Over C10-C28)	<50.2	U *	50.2	mg/Kg		07/27/23 08:51	08/01/23 14:26	1
Oil Range Organics (Over C28-C36)	<50.2	U	50.2	mg/Kg		07/27/23 08:51	08/01/23 14:26	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	123		70 - 130			07/27/23 08:51	08/01/23 14:26	1
o-Terphenyl	140	S1+	70 - 130			07/27/23 08:51	08/01/23 14:26	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	60.9		4.96	mg/Kg			07/25/23 15:05	1

Client Sample ID: FS01

Lab Sample ID: 890-4972-4

Date Collected: 07/20/23 13:20

Matrix: Solid

Date Received: 07/20/23 15:58

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:51	07/26/23 07:36	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:51	07/26/23 07:36	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:51	07/26/23 07:36	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		07/25/23 13:51	07/26/23 07:36	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:51	07/26/23 07:36	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		07/25/23 13:51	07/26/23 07:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130			07/25/23 13:51	07/26/23 07:36	1
1,4-Difluorobenzene (Surr)	105		70 - 130			07/25/23 13:51	07/26/23 07:36	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			07/26/23 09:30	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			08/02/23 10:27	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		07/27/23 08:51	08/01/23 14:48	1
Diesel Range Organics (Over C10-C28)	<49.9	U *	49.9	mg/Kg		07/27/23 08:51	08/01/23 14:48	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		07/27/23 08:51	08/01/23 14:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	102		70 - 130			07/27/23 08:51	08/01/23 14:48	1
o-Terphenyl	111		70 - 130			07/27/23 08:51	08/01/23 14:48	1

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Client Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4972-1
SDG: 03C1558256

Client Sample ID: FS01
Date Collected: 07/20/23 13:20
Date Received: 07/20/23 15:58
Sample Depth: 1

Lab Sample ID: 890-4972-4
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	97.5		5.01	mg/Kg			07/25/23 15:10	1	

- 1
- 2
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- 12
- 13
- 14

Surrogate Summary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4972-1
SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-30945-A-1-D MS	Matrix Spike	108	98
880-30945-A-1-E MSD	Matrix Spike Duplicate	116	103
890-4972-1	BH01	126	106
890-4972-2	BH02	122	107
890-4972-3	SS07	116	107
890-4972-4	FS01	109	105
LCS 880-58483/1-A	Lab Control Sample	110	101
LCSD 880-58483/2-A	Lab Control Sample Dup	112	96
MB 880-58465/5-A	Method Blank	93	92
MB 880-58483/5-A	Method Blank	97	91
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-4969-A-3-E MS	Matrix Spike	101	103
890-4969-A-3-F MSD	Matrix Spike Duplicate	100	100
890-4972-1	BH01	111	126
890-4972-2	BH02	107	115
890-4972-3	SS07	123	140 S1+
890-4972-4	FS01	102	111
LCS 880-58634/2-A	Lab Control Sample	73	84
LCSD 880-58634/3-A	Lab Control Sample Dup	75	86
MB 880-58634/1-A	Method Blank	149 S1+	167 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum

Job ID: 890-4972-1

Project/Site: James Ranch Unit 19 Battery

SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-58465/5-A

Matrix: Solid

Analysis Batch: 58416

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58465

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/25/23 11:03	07/25/23 13:12	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/25/23 11:03	07/25/23 13:12	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/25/23 11:03	07/25/23 13:12	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/25/23 11:03	07/25/23 13:12	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/25/23 11:03	07/25/23 13:12	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/25/23 11:03	07/25/23 13:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		70 - 130	07/25/23 11:03	07/25/23 13:12	1
1,4-Difluorobenzene (Surr)	92		70 - 130	07/25/23 11:03	07/25/23 13:12	1

Lab Sample ID: MB 880-58483/5-A

Matrix: Solid

Analysis Batch: 58416

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58483

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:51	07/25/23 23:56	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:51	07/25/23 23:56	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:51	07/25/23 23:56	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/25/23 13:51	07/25/23 23:56	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:51	07/25/23 23:56	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/25/23 13:51	07/25/23 23:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130	07/25/23 13:51	07/25/23 23:56	1
1,4-Difluorobenzene (Surr)	91		70 - 130	07/25/23 13:51	07/25/23 23:56	1

Lab Sample ID: LCS 880-58483/1-A

Matrix: Solid

Analysis Batch: 58416

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 58483

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09822		mg/Kg		98	70 - 130
Toluene	0.100	0.1025		mg/Kg		102	70 - 130
Ethylbenzene	0.100	0.09459		mg/Kg		95	70 - 130
m-Xylene & p-Xylene	0.200	0.1813		mg/Kg		91	70 - 130
o-Xylene	0.100	0.09249		mg/Kg		92	70 - 130

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

Lab Sample ID: LCSD 880-58483/2-A

Matrix: Solid

Analysis Batch: 58416

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 58483

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09545		mg/Kg		95	70 - 130	3	35

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4972-1
SDG: 03C1558256

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

Lab Sample ID: LCSD 880-58483/2-A

Matrix: Solid

Analysis Batch: 58416

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 58483

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Toluene	0.100	0.1040		mg/Kg		104	70 - 130	1		35
Ethylbenzene	0.100	0.09599		mg/Kg		96	70 - 130	1		35
m-Xylene & p-Xylene	0.200	0.1857		mg/Kg		93	70 - 130	2		35
o-Xylene	0.100	0.09453		mg/Kg		95	70 - 130	2		35

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	112		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: 880-30945-A-1-D MS

Matrix: Solid

Analysis Batch: 58416

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 58483

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	RPD
Benzene	<0.00200	U	0.0996	0.08686		mg/Kg		86	70 - 130	
Toluene	0.00407		0.0996	0.09151		mg/Kg		88	70 - 130	
Ethylbenzene	<0.00200	U	0.0996	0.07884		mg/Kg		79	70 - 130	
m-Xylene & p-Xylene	<0.00401	U	0.199	0.1490		mg/Kg		73	70 - 130	
o-Xylene	<0.00200	U	0.0996	0.07415		mg/Kg		74	70 - 130	

Surrogate	MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	108		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: 880-30945-A-1-E MSD

Matrix: Solid

Analysis Batch: 58416

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 58483

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits	RPD		
Benzene	<0.00200	U	0.0994	0.08405		mg/Kg		84	70 - 130	3		35
Toluene	0.00407		0.0994	0.09256		mg/Kg		89	70 - 130	1		35
Ethylbenzene	<0.00200	U	0.0994	0.08203		mg/Kg		83	70 - 130	4		35
m-Xylene & p-Xylene	<0.00401	U	0.199	0.1573		mg/Kg		78	70 - 130	5		35
o-Xylene	<0.00200	U	0.0994	0.07863		mg/Kg		78	70 - 130	6		35

Surrogate	MSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	116		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

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

Lab Sample ID: MB 880-58634/1-A

Matrix: Solid

Analysis Batch: 58963

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58634

Analyte	MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/27/23 08:51	08/01/23 07:24	1

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4972-1
SDG: 03C1558256

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

Lab Sample ID: MB 880-58634/1-A

Matrix: Solid

Analysis Batch: 58963

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58634

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/27/23 08:51	08/01/23 07:24	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/27/23 08:51	08/01/23 07:24	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	149	S1+	70 - 130			07/27/23 08:51	08/01/23 07:24	1
o-Terphenyl	167	S1+	70 - 130			07/27/23 08:51	08/01/23 07:24	1

Lab Sample ID: LCS 880-58634/2-A

Matrix: Solid

Analysis Batch: 58963

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 58634

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	928.3		mg/Kg		93	70 - 130
Diesel Range Organics (Over C10-C28)	1000	668.8	*-	mg/Kg		67	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	73		70 - 130				
o-Terphenyl	84		70 - 130				

Lab Sample ID: LCSD 880-58634/3-A

Matrix: Solid

Analysis Batch: 58963

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 58634

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	995.4		mg/Kg		100	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	1000	723.1		mg/Kg		72	70 - 130	8	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	75		70 - 130						
o-Terphenyl	86		70 - 130						

Lab Sample ID: 890-4969-A-3-E MS

Matrix: Solid

Analysis Batch: 58963

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 58634

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.4	U	996	918.5		mg/Kg		88	70 - 130
Diesel Range Organics (Over C10-C28)	64.9	*-	996	858.8		mg/Kg		80	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	101		70 - 130						
o-Terphenyl	103		70 - 130						

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QC Sample Results

Client: Ensolum

Job ID: 890-4972-1

Project/Site: James Ranch Unit 19 Battery

SDG: 03C1558256

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

Lab Sample ID: 890-4969-A-3-F MSD

Matrix: Solid

Analysis Batch: 58963

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 58634

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.4	U	996	813.1		mg/Kg		77	70 - 130	12	20
Diesel Range Organics (Over C10-C28)	64.9	*-	996	840.0		mg/Kg		78	70 - 130	2	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	100		70 - 130								
o-Terphenyl	100		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-58383/1-A

Matrix: Solid

Analysis Batch: 58469

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			07/25/23 14:31	1

Lab Sample ID: LCS 880-58383/2-A

Matrix: Solid

Analysis Batch: 58469

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	241.5		mg/Kg		97	90 - 110

Lab Sample ID: LCSD 880-58383/3-A

Matrix: Solid

Analysis Batch: 58469

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	242.7		mg/Kg		97	90 - 110	1	20

Lab Sample ID: 890-4972-1 MS

Matrix: Solid

Analysis Batch: 58469

Client Sample ID: BH01

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	389	F1	250	602.5	F1	mg/Kg		86	90 - 110

Lab Sample ID: 890-4972-1 MSD

Matrix: Solid

Analysis Batch: 58469

Client Sample ID: BH01

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	389	F1	250	601.9	F1	mg/Kg		86	90 - 110	0	20

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QC Association Summary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4972-1
SDG: 03C1558256

GC VOA

Analysis Batch: 58416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4972-1	BH01	Total/NA	Solid	8021B	58483
890-4972-2	BH02	Total/NA	Solid	8021B	58483
890-4972-3	SS07	Total/NA	Solid	8021B	58483
890-4972-4	FS01	Total/NA	Solid	8021B	58483
MB 880-58465/5-A	Method Blank	Total/NA	Solid	8021B	58465
MB 880-58483/5-A	Method Blank	Total/NA	Solid	8021B	58483
LCS 880-58483/1-A	Lab Control Sample	Total/NA	Solid	8021B	58483
LCSD 880-58483/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	58483
880-30945-A-1-D MS	Matrix Spike	Total/NA	Solid	8021B	58483
880-30945-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	58483

Prep Batch: 58465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-58465/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 58483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4972-1	BH01	Total/NA	Solid	5035	
890-4972-2	BH02	Total/NA	Solid	5035	
890-4972-3	SS07	Total/NA	Solid	5035	
890-4972-4	FS01	Total/NA	Solid	5035	
MB 880-58483/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-58483/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-58483/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-30945-A-1-D MS	Matrix Spike	Total/NA	Solid	5035	
880-30945-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 58531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4972-1	BH01	Total/NA	Solid	Total BTEX	
890-4972-2	BH02	Total/NA	Solid	Total BTEX	
890-4972-3	SS07	Total/NA	Solid	Total BTEX	
890-4972-4	FS01	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 58634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4972-1	BH01	Total/NA	Solid	8015NM Prep	
890-4972-2	BH02	Total/NA	Solid	8015NM Prep	
890-4972-3	SS07	Total/NA	Solid	8015NM Prep	
890-4972-4	FS01	Total/NA	Solid	8015NM Prep	
MB 880-58634/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-58634/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-58634/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4969-A-3-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-4969-A-3-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 58963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4972-1	BH01	Total/NA	Solid	8015B NM	58634

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QC Association Summary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4972-1
SDG: 03C1558256

GC Semi VOA (Continued)

Analysis Batch: 58963 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4972-2	BH02	Total/NA	Solid	8015B NM	58634
890-4972-3	SS07	Total/NA	Solid	8015B NM	58634
890-4972-4	FS01	Total/NA	Solid	8015B NM	58634
MB 880-58634/1-A	Method Blank	Total/NA	Solid	8015B NM	58634
LCS 880-58634/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	58634
LCSD 880-58634/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	58634
890-4969-A-3-E MS	Matrix Spike	Total/NA	Solid	8015B NM	58634
890-4969-A-3-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	58634

Analysis Batch: 59095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4972-1	BH01	Total/NA	Solid	8015 NM	
890-4972-2	BH02	Total/NA	Solid	8015 NM	
890-4972-3	SS07	Total/NA	Solid	8015 NM	
890-4972-4	FS01	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 58383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4972-1	BH01	Soluble	Solid	DI Leach	
890-4972-2	BH02	Soluble	Solid	DI Leach	
890-4972-3	SS07	Soluble	Solid	DI Leach	
890-4972-4	FS01	Soluble	Solid	DI Leach	
MB 880-58383/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-58383/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-58383/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4972-1 MS	BH01	Soluble	Solid	DI Leach	
890-4972-1 MSD	BH01	Soluble	Solid	DI Leach	

Analysis Batch: 58469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4972-1	BH01	Soluble	Solid	300.0	58383
890-4972-2	BH02	Soluble	Solid	300.0	58383
890-4972-3	SS07	Soluble	Solid	300.0	58383
890-4972-4	FS01	Soluble	Solid	300.0	58383
MB 880-58383/1-A	Method Blank	Soluble	Solid	300.0	58383
LCS 880-58383/2-A	Lab Control Sample	Soluble	Solid	300.0	58383
LCSD 880-58383/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	58383
890-4972-1 MS	BH01	Soluble	Solid	300.0	58383
890-4972-1 MSD	BH01	Soluble	Solid	300.0	58383

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4972-1
SDG: 03C1558256

Client Sample ID: BH01

Date Collected: 07/20/23 09:05

Date Received: 07/20/23 15:58

Lab Sample ID: 890-4972-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	58483	07/25/23 13:51	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	58416	07/26/23 06:34	SM	EET MID
Total/NA	Analysis	Total BTEX		1			58531	07/26/23 09:30	SM	EET MID
Total/NA	Analysis	8015 NM		1			59095	08/02/23 10:27	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.91 g	10 mL	58634	07/27/23 08:51	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	58963	08/01/23 13:41	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	58383	07/24/23 14:48	KS	EET MID
Soluble	Analysis	300.0		1			58469	07/25/23 14:46	CH	EET MID

Client Sample ID: BH02

Date Collected: 07/20/23 09:45

Date Received: 07/20/23 15:58

Lab Sample ID: 890-4972-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	58483	07/25/23 13:51	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	58416	07/26/23 06:54	SM	EET MID
Total/NA	Analysis	Total BTEX		1			58531	07/26/23 09:30	SM	EET MID
Total/NA	Analysis	8015 NM		1			59095	08/02/23 10:27	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.95 g	10 mL	58634	07/27/23 08:51	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	58963	08/01/23 14:03	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	58383	07/24/23 14:48	KS	EET MID
Soluble	Analysis	300.0		1			58469	07/25/23 15:01	CH	EET MID

Client Sample ID: SS07

Date Collected: 07/20/23 10:30

Date Received: 07/20/23 15:58

Lab Sample ID: 890-4972-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	58483	07/25/23 13:51	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	58416	07/26/23 07:15	SM	EET MID
Total/NA	Analysis	Total BTEX		1			58531	07/26/23 09:30	SM	EET MID
Total/NA	Analysis	8015 NM		1			59095	08/02/23 10:27	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.96 g	10 mL	58634	07/27/23 08:51	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	58963	08/01/23 14:26	AJ	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	58383	07/24/23 14:48	KS	EET MID
Soluble	Analysis	300.0		1			58469	07/25/23 15:05	CH	EET MID

Client Sample ID: FS01

Date Collected: 07/20/23 13:20

Date Received: 07/20/23 15:58

Lab Sample ID: 890-4972-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	58483	07/25/23 13:51	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	58416	07/26/23 07:36	SM	EET MID
Total/NA	Analysis	Total BTEX		1			58531	07/26/23 09:30	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4972-1
SDG: 03C1558256

Client Sample ID: FS01

Date Collected: 07/20/23 13:20

Date Received: 07/20/23 15:58

Lab Sample ID: 890-4972-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			59095	08/02/23 10:27	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	58634	07/27/23 08:51	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	58963	08/01/23 14:48	AJ	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	58383	07/24/23 14:48	KS	EET MID
Soluble	Analysis	300.0		1			58469	07/25/23 15:10	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
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4972-1
SDG: 03C1558256

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4972-1
SDG: 03C1558256

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: James Ranch Unit 19 Battery

Job ID: 890-4972-1
SDG: 03C1558256

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4972-1	BH01	Solid	07/20/23 09:05	07/20/23 15:58	4
890-4972-2	BH02	Solid	07/20/23 09:45	07/20/23 15:58	2
890-4972-3	SS07	Solid	07/20/23 10:30	07/20/23 15:58	0.5
890-4972-4	FS01	Solid	07/20/23 13:20	07/20/23 15:58	1

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- 14



Environment Testing
Xenco

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 968-3199

Chain of Custody

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Ben Bell	Bill to: (if different)	Garrett Green
Company Name:	ENSOLUM, LLC	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Greene St
City, State Zip:	Carlsbad, NM 88220	City, State Zip:	Carlsbad, NM 88220
Phone:	989-854-0852	Email:	Garrett.Green@ExxonMobil.com

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

Project Name:	James Ranch Unit 19 Battery Turn Around	Pres. Code	
Project Number:	0301558250	Due Date:	5 days
Project Location:	3234000-103-83248	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Mariana O'Dell	Corrected Temperature:	0.8
P.O. #:			
SAMPLE RECEIPT	Temp Blank: Yes No	Wet: Yes No	Parameters
Samples Received Intact:	Yes No	Thermometer ID:	11111111
Cooler Custody Seals:	Yes No	Correction Factor:	-0.2
Sample Custody Seals:	Yes No	Temperature Reading:	1.6
Total Containers:			



890-4972 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Chlorides	TPH	BTEX	Preservative Codes	Sample Comments
BH01	S	7/26/23	9:05	4'	G	1	X	X	X	None: NO	DI Water: H2O
BH02	S	7/20/23	9:45	2'	G	1	X	X	X	Cool: Cool	MeOH: Me
SS04	S	7/20/23	10:30	0.5'	G	1	X	X	X	HCL: HC	HNO3: HN
FS01	S	7/20/23	13:20	1'	G	1	X	X	X	H2SO4: H2	NaOH: Na
										H3PO4: HP	
										NaHSO4: NABIS	
										Na2S2O3: NABO 3	
										Zn Acetate + NaOH: Zn	
										NaOH + Ascorbic Acid: SARC	

Total 2007/6010 2008/6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP/SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>[Signature]</i>	<i>[Signature]</i>	7:30:23 1558			
3					
5					

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4972-1

SDG Number: 03C1558256

Login Number: 4972

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4972-1

SDG Number: 03C1558256

Login Number: 4972

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 07/24/23 08:33 AM

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



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701
Generated 8/1/2023 10:29:35 AM

JOB DESCRIPTION

James Ranch Unit 19 Battery
SDG NUMBER 03C1558256

JOB NUMBER

890-4973-1

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
8/1/2023 10:29:35 AM

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

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Laboratory Job ID: 890-4973-1
SDG: 03C1558256

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Definitions/Glossary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4973-1
SDG: 03C1558256

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4973-1
SDG: 03C1558256

Job ID: 890-4973-1

Laboratory: Eurofins Carlsbad

Narrative	Job Narrative 890-4973-1
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Receipt

The sample was received on 7/20/2023 3:58 PM. 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 0.8°C

Receipt Exceptions

The following sample was received and analyzed from an unpreserved bulk soil jar: BH01 (890-4973-1).

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 laboratory control sample (LCS) associated with preparation batch 880-58486 and analytical batch 880-58813 was outside acceptance criteria for gasoline range hydrocarbons. 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 for gasoline range hydrocarbons and may be used to evaluate matrix performance.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS) recoveries for preparation batch 880-58486 and analytical batch 880-58813 were outside control limits for diesel range hydrocarbons. 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 for this analyte.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (MB 880-58486/1-A). Evidence of matrix interferences is not obvious.

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

HPLC/IC

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

Client Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4973-1
SDG: 03C1558256

Client Sample ID: BH01

Lab Sample ID: 890-4973-1

Date Collected: 07/20/23 08:55

Matrix: Solid

Date Received: 07/20/23 15:58

Sample Depth: 2

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		07/25/23 13:33	07/26/23 13:01	1
Toluene	<0.00199	U	0.00199	mg/Kg		07/25/23 13:33	07/26/23 13:01	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		07/25/23 13:33	07/26/23 13:01	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		07/25/23 13:33	07/26/23 13:01	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		07/25/23 13:33	07/26/23 13:01	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		07/25/23 13:33	07/26/23 13:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130	07/25/23 13:33	07/26/23 13:01	1
1,4-Difluorobenzene (Surr)	85		70 - 130	07/25/23 13:33	07/26/23 13:01	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			07/26/23 16:18	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3	mg/Kg			08/01/23 10:34	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.3	U *1	50.3	mg/Kg		07/25/23 14:23	08/01/23 02:30	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		07/25/23 14:23	08/01/23 02:30	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		07/25/23 14:23	08/01/23 02:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	110		70 - 130	07/25/23 14:23	08/01/23 02:30	1
o-Terphenyl	100		70 - 130	07/25/23 14:23	08/01/23 02:30	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	92.1		4.98	mg/Kg			07/24/23 19:10	1

Eurofins Carlsbad

Surrogate Summary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4973-1
SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-4957-A-1-E MS	Matrix Spike	92	96
890-4957-A-1-F MSD	Matrix Spike Duplicate	100	96
890-4973-1	BH01	102	85
LCS 880-58479/1-A	Lab Control Sample	99	93
LCSD 880-58479/2-A	Lab Control Sample Dup	102	99
MB 880-58423/8	Method Blank	60 S1-	85
MB 880-58479/5-A	Method Blank	56 S1-	85
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-4952-A-1-H MS	Matrix Spike	100	80
890-4952-A-1-I MSD	Matrix Spike Duplicate	103	83
890-4973-1	BH01	110	100
LCS 880-58486/2-A	Lab Control Sample	95	100
LCSD 880-58486/3-A	Lab Control Sample Dup	112	110
MB 880-58486/1-A	Method Blank	156 S1+	143 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4973-1
SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-58423/8

Matrix: Solid

Analysis Batch: 58423

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg			07/25/23 12:56	1
Toluene	<0.00200	U	0.00200	mg/Kg			07/25/23 12:56	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg			07/25/23 12:56	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg			07/25/23 12:56	1
o-Xylene	<0.00200	U	0.00200	mg/Kg			07/25/23 12:56	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg			07/25/23 12:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	60	S1-	70 - 130		07/25/23 12:56	1
1,4-Difluorobenzene (Surr)	85		70 - 130		07/25/23 12:56	1

Lab Sample ID: MB 880-58479/5-A

Matrix: Solid

Analysis Batch: 58423

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58479

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:33	07/26/23 02:23	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:33	07/26/23 02:23	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:33	07/26/23 02:23	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/25/23 13:33	07/26/23 02:23	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/25/23 13:33	07/26/23 02:23	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/25/23 13:33	07/26/23 02:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	56	S1-	70 - 130	07/25/23 13:33	07/26/23 02:23	1
1,4-Difluorobenzene (Surr)	85		70 - 130	07/25/23 13:33	07/26/23 02:23	1

Lab Sample ID: LCS 880-58479/1-A

Matrix: Solid

Analysis Batch: 58423

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 58479

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.08818		mg/Kg		88	70 - 130
Toluene	0.100	0.09086		mg/Kg		91	70 - 130
Ethylbenzene	0.100	0.1028		mg/Kg		103	70 - 130
m-Xylene & p-Xylene	0.200	0.1860		mg/Kg		93	70 - 130
o-Xylene	0.100	0.08776		mg/Kg		88	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Lab Sample ID: LCSD 880-58479/2-A

Matrix: Solid

Analysis Batch: 58423

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 58479

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09531		mg/Kg		95	70 - 130	8	35

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4973-1
SDG: 03C1558256

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

Lab Sample ID: LCSD 880-58479/2-A

Matrix: Solid

Analysis Batch: 58423

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 58479

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits			
Toluene	0.100	0.09806		mg/Kg		98	70 - 130		8	35
Ethylbenzene	0.100	0.1034		mg/Kg		103	70 - 130		1	35
m-Xylene & p-Xylene	0.200	0.1911		mg/Kg		96	70 - 130		3	35
o-Xylene	0.100	0.09927		mg/Kg		99	70 - 130		12	35

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

Lab Sample ID: 890-4957-A-1-E MS

Matrix: Solid

Analysis Batch: 58423

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 58479

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	
Benzene	<0.00199	U	0.0996	0.07998		mg/Kg		80	70 - 130	
Toluene	<0.00199	U	0.0996	0.07081		mg/Kg		71	70 - 130	
Ethylbenzene	<0.00199	U F1	0.0996	0.06043	F1	mg/Kg		61	70 - 130	
m-Xylene & p-Xylene	<0.00398	U F1	0.199	0.1030	F1	mg/Kg		52	70 - 130	
o-Xylene	<0.00199	U F1	0.0996	0.04846	F1	mg/Kg		49	70 - 130	

Surrogate	MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	92		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: 890-4957-A-1-F MSD

Matrix: Solid

Analysis Batch: 58423

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 58479

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits			
Benzene	<0.00199	U	0.0992	0.08807		mg/Kg		89	70 - 130		10	35
Toluene	<0.00199	U	0.0992	0.07818		mg/Kg		79	70 - 130		10	35
Ethylbenzene	<0.00199	U F1	0.0992	0.06863	F1	mg/Kg		69	70 - 130		13	35
m-Xylene & p-Xylene	<0.00398	U F1	0.198	0.1077	F1	mg/Kg		54	70 - 130		4	35
o-Xylene	<0.00199	U F1	0.0992	0.05045	F1	mg/Kg		51	70 - 130		4	35

Surrogate	MSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

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

Lab Sample ID: MB 880-58486/1-A

Matrix: Solid

Analysis Batch: 58813

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58486

Analyte	MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/25/23 14:23	07/31/23 19:53	1

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4973-1
SDG: 03C1558256

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

Lab Sample ID: MB 880-58486/1-A

Matrix: Solid

Analysis Batch: 58813

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58486

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/25/23 14:23	07/31/23 19:53	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/25/23 14:23	07/31/23 19:53	1
Surrogate	MB	MB	Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
1-Chlorooctane	156	S1+	70 - 130			07/25/23 14:23	07/31/23 19:53	1
o-Terphenyl	143	S1+	70 - 130			07/25/23 14:23	07/31/23 19:53	1

Lab Sample ID: LCS 880-58486/2-A

Matrix: Solid

Analysis Batch: 58813

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 58486

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec	
		Result	Qualifier				Limits	
Gasoline Range Organics (GRO)-C6-C10	1000	519.3	*-	mg/Kg		52	70 - 130	
Diesel Range Organics (Over C10-C28)	1000	883.1		mg/Kg		88	70 - 130	
Surrogate		LCS	LCS				Limits	
		%Recovery	Qualifier					
1-Chlorooctane		95					70 - 130	
o-Terphenyl		100					70 - 130	

Lab Sample ID: LCSD 880-58486/3-A

Matrix: Solid

Analysis Batch: 58813

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 58486

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec	RPD	Limit
		Result	Qualifier				Limits		
Gasoline Range Organics (GRO)-C6-C10	1000	678.2	*- *1	mg/Kg		68	70 - 130	27	20
Diesel Range Organics (Over C10-C28)	1000	1050		mg/Kg		105	70 - 130	17	20
Surrogate		LCSD	LCSD				Limits		
		%Recovery	Qualifier						
1-Chlorooctane		112					70 - 130		
o-Terphenyl		110					70 - 130		

Lab Sample ID: 890-4952-A-1-H MS

Matrix: Solid

Analysis Batch: 58813

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 58486

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec	
	Result	Qualifier		Result	Qualifier				Limits	
Gasoline Range Organics (GRO)-C6-C10	<50.3	U *- *1	998	728.0		mg/Kg		73	70 - 130	
Diesel Range Organics (Over C10-C28)	608	F1	998	1258	F1	mg/Kg		65	70 - 130	
Surrogate	MS	MS							Limits	
	%Recovery	Qualifier								
1-Chlorooctane	100								70 - 130	
o-Terphenyl	80								70 - 130	

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QC Sample Results

Client: Ensolum

Job ID: 890-4973-1

Project/Site: James Ranch Unit 19 Battery

SDG: 03C1558256

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

Lab Sample ID: 890-4952-A-1-I MSD

Matrix: Solid

Analysis Batch: 58813

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 58486

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.3	U *- *1	998	741.8		mg/Kg		74	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	608	F1	998	1304		mg/Kg		70	70 - 130	4	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	103		70 - 130								
o-Terphenyl	83		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-58338/1-A

Matrix: Solid

Analysis Batch: 58385

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			07/24/23 16:36	1

Lab Sample ID: LCS 880-58338/2-A

Matrix: Solid

Analysis Batch: 58385

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	233.4		mg/Kg		93	90 - 110

Lab Sample ID: LCSD 880-58338/3-A

Matrix: Solid

Analysis Batch: 58385

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	234.6		mg/Kg		94	90 - 110	1	20

Lab Sample ID: 880-31082-A-31-B MS

Matrix: Solid

Analysis Batch: 58385

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2320		1260	3574		mg/Kg		99	90 - 110

Lab Sample ID: 880-31082-A-31-C MSD

Matrix: Solid

Analysis Batch: 58385

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	2320		1260	3597		mg/Kg		101	90 - 110	1	20

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QC Association Summary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4973-1
SDG: 03C1558256

GC VOA

Analysis Batch: 58423

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4973-1	BH01	Total/NA	Solid	8021B	58479
MB 880-58423/8	Method Blank	Total/NA	Solid	8021B	
MB 880-58479/5-A	Method Blank	Total/NA	Solid	8021B	58479
LCS 880-58479/1-A	Lab Control Sample	Total/NA	Solid	8021B	58479
LCSD 880-58479/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	58479
890-4957-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	58479
890-4957-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	58479

Prep Batch: 58479

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4973-1	BH01	Total/NA	Solid	5035	
MB 880-58479/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-58479/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-58479/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4957-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
890-4957-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 58588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4973-1	BH01	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 58486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4973-1	BH01	Total/NA	Solid	8015NM Prep	
MB 880-58486/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-58486/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-58486/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4952-A-1-H MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-4952-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 58813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4973-1	BH01	Total/NA	Solid	8015B NM	58486
MB 880-58486/1-A	Method Blank	Total/NA	Solid	8015B NM	58486
LCS 880-58486/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	58486
LCSD 880-58486/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	58486
890-4952-A-1-H MS	Matrix Spike	Total/NA	Solid	8015B NM	58486
890-4952-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	58486

Analysis Batch: 58994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4973-1	BH01	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 58338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4973-1	BH01	Soluble	Solid	DI Leach	
MB 880-58338/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-58338/2-A	Lab Control Sample	Soluble	Solid	DI Leach	

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QC Association Summary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4973-1
SDG: 03C1558256

HPLC/IC (Continued)

Leach Batch: 58338 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-58338/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-31082-A-31-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-31082-A-31-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 58385

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4973-1	BH01	Soluble	Solid	300.0	58338
MB 880-58338/1-A	Method Blank	Soluble	Solid	300.0	58338
LCS 880-58338/2-A	Lab Control Sample	Soluble	Solid	300.0	58338
LCSD 880-58338/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	58338
880-31082-A-31-B MS	Matrix Spike	Soluble	Solid	300.0	58338
880-31082-A-31-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	58338

Lab Chronicle

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4973-1
SDG: 03C1558256

Client Sample ID: BH01

Lab Sample ID: 890-4973-1

Date Collected: 07/20/23 08:55

Matrix: Solid

Date Received: 07/20/23 15:58

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	58479	07/25/23 13:33	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	58423	07/26/23 13:01	SM	EET MID
Total/NA	Analysis	Total BTEX		1			58588	07/26/23 16:18	AJ	EET MID
Total/NA	Analysis	8015 NM		1			58994	08/01/23 10:34	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.95 g	10 mL	58486	07/25/23 14:23	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	58813	08/01/23 02:30	AJ	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	58338	07/24/23 10:00	KS	EET MID
Soluble	Analysis	300.0		1			58385	07/24/23 19:10	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: James Ranch Unit 19 Battery

Job ID: 890-4973-1
SDG: 03C1558256

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-4973-1
SDG: 03C1558256

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: James Ranch Unit 19 Battery

Job ID: 890-4973-1
SDG: 03C1558256

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4973-1	BH01	Solid	07/20/23 08:55	07/20/23 15:58	2

- 1
- 2
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Environment Testing
Xenco

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

Chain of Custody

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Ben Beill	Bill to: (if different)	Garrett Green
Company Name:	ENSOLUM, LLC	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3124 E Greene St
City, State Zip:	Carlsbad, NM 88220	City, State Zip:	Carlsbad, NM 88220
Phone:	989-854-0852	Email:	Garrett.Green@xtonobil.com

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

Project Name:	James Ranch Unit 19 Battery	Turn Around	☒ Routine ☐ Rush	Pres. Code	
Project Number:	03C155 8256	Due Date:	5 days		
Project Location:	32.34444, -103.03248	TAT starts the day received by the lab, if received by 4:30pm			
Sampler's Name:	Mariana O'Dell				
P.O. #:					
SAMPLE RECEIPT	Temp Blank: ☒ Yes ☐ No	Wet Ice: ☒ Yes ☐ No			
Samples Received Intact:	☒ Yes ☐ No	Thermometer ID: 7106057			
Cooler Custody Seals:	☒ Yes ☐ No	Correction Factor: -0.2			
Sample Custody Seals:	☒ Yes ☐ No	Temperature Reading: 1.0			
Total Containers:		Corrected Temperature: 0.8			



890-4973 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters	ANALYSIS REQUEST	Preservative Codes	Sample Comments
BH01	S	7/20/23	8:55	2'	G	1	Chlorides BTEX TPH		None: NO Cool: Cool HCL: HC H ₂ SO ₄ : H ₂ H ₃ PO ₄ : HP NaHSO ₄ : NABIS Na ₂ S ₂ O ₅ : NASO ₃ Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: SACP	Incident #: NABP2317142256 Cost center: 1080931001 Ben Beill bbeill@ensolum.com

Total 2007 / 6010 2008 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	7:20:23 7/20/23			

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4973-1

SDG Number: 03C1558256

Login Number: 4973

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4973-1

SDG Number: 03C1558256

Login Number: 4973

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 07/24/23 08:33 AM

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



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 8/18/2023 9:34:39 AM

JOB DESCRIPTION

James Ranch Unit 19 Battery

SDG NUMBER 03C1558256

JOB NUMBER

890-5053-1

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
8/18/2023 9:34:39 AM

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

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Laboratory Job ID: 890-5053-1
SDG: 03C1558256

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Definitions/Glossary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-5053-1
SDG: 03C1558256

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-5053-1
SDG: 03C1558256

Job ID: 890-5053-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-5053-1

Receipt

The sample was received on 8/8/2023 2:10 PM. 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 4.8°C

Receipt Exceptions

The following sample was received and analyzed from an unpreserved bulk soil jar: SW01 (890-5053-1).

GC VOA

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-60364 and analytical batch 880-60348 was outside the upper control limits.

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-60348 recovered below the lower control limit for o-Xylene. An acceptable CCV was ran within the 12 hour window, therefore the data has been qualified and reported. The associated sample is impacted: (CCV 880-60348/33).

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: (CCV 880-60424/5) and (LCSD 880-60324/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (CCV 880-60424/20). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-60324 and analytical batch 880-60424 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.

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

HPLC/IC

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

Client Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-5053-1
SDG: 03C1558256

Client Sample ID: SW01

Lab Sample ID: 890-5053-1

Date Collected: 08/03/23 13:30

Matrix: Solid

Date Received: 08/08/23 14:10

Sample Depth: 0 - 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/16/23 09:58	08/16/23 20:43	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/16/23 09:58	08/16/23 20:43	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/16/23 09:58	08/16/23 20:43	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/16/23 09:58	08/16/23 20:43	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/16/23 09:58	08/16/23 20:43	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/16/23 09:58	08/16/23 20:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		70 - 130	08/16/23 09:58	08/16/23 20:43	1
1,4-Difluorobenzene (Surr)	90		70 - 130	08/16/23 09:58	08/16/23 20:43	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			08/17/23 10:00	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	94.1		50.1	mg/Kg			08/18/23 10:13	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.1	U	50.1	mg/Kg		08/15/23 16:47	08/17/23 16:48	1
Diesel Range Organics (Over C10-C28)	94.1		50.1	mg/Kg		08/15/23 16:47	08/17/23 16:48	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		08/15/23 16:47	08/17/23 16:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	107		70 - 130	08/15/23 16:47	08/17/23 16:48	1
o-Terphenyl	115		70 - 130	08/15/23 16:47	08/17/23 16:48	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	738		5.01	mg/Kg			08/11/23 10:31	1

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Surrogate Summary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-5053-1
SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-5053-1	SW01	78	90
890-5093-A-1-E MS	Matrix Spike	95	99
890-5093-A-1-F MSD	Matrix Spike Duplicate	93	96
LCS 880-60364/1-A	Lab Control Sample	95	88
LCSD 880-60364/2-A	Lab Control Sample Dup	91	96
MB 880-60364/5-A	Method Blank	100	134 S1+
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-31596-A-1-D MS	Matrix Spike	91	84
880-31596-A-1-E MSD	Matrix Spike Duplicate	84	80
890-5053-1	SW01	107	115
LCS 880-60324/2-A	Lab Control Sample	113	125
LCSD 880-60324/3-A	Lab Control Sample Dup	118	131 S1+
MB 880-60324/1-A	Method Blank	118	129
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-5053-1
SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-60364/5-A

Matrix: Solid

Analysis Batch: 60348

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 60364

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/16/23 09:58	08/16/23 14:42	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/16/23 09:58	08/16/23 14:42	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/16/23 09:58	08/16/23 14:42	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/16/23 09:58	08/16/23 14:42	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/16/23 09:58	08/16/23 14:42	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/16/23 09:58	08/16/23 14:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	08/16/23 09:58	08/16/23 14:42	1
1,4-Difluorobenzene (Surr)	134	S1+	70 - 130	08/16/23 09:58	08/16/23 14:42	1

Lab Sample ID: LCS 880-60364/1-A

Matrix: Solid

Analysis Batch: 60348

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 60364

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09225		mg/Kg		92	70 - 130
Toluene	0.100	0.1034		mg/Kg		103	70 - 130
Ethylbenzene	0.100	0.09910		mg/Kg		99	70 - 130
m-Xylene & p-Xylene	0.200	0.2002		mg/Kg		100	70 - 130
o-Xylene	0.100	0.09527		mg/Kg		95	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		70 - 130
1,4-Difluorobenzene (Surr)	88		70 - 130

Lab Sample ID: LCSD 880-60364/2-A

Matrix: Solid

Analysis Batch: 60348

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 60364

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1031		mg/Kg		103	70 - 130	11	35
Toluene	0.100	0.1005		mg/Kg		101	70 - 130	3	35
Ethylbenzene	0.100	0.09272		mg/Kg		93	70 - 130	7	35
m-Xylene & p-Xylene	0.200	0.1921		mg/Kg		96	70 - 130	4	35
o-Xylene	0.100	0.09112		mg/Kg		91	70 - 130	4	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	91		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: 890-5093-A-1-E MS

Matrix: Solid

Analysis Batch: 60348

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 60364

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0996	0.1075		mg/Kg		108	70 - 130
Toluene	<0.00199	U	0.0996	0.1008		mg/Kg		101	70 - 130

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QC Sample Results

Client: Ensolum

Job ID: 890-5053-1

Project/Site: James Ranch Unit 19 Battery

SDG: 03C1558256

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

Lab Sample ID: 890-5093-A-1-E MS

Client Sample ID: Matrix Spike

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 60348

Prep Batch: 60364

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0996	0.09476		mg/Kg		95	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.199	0.2049		mg/Kg		103	70 - 130
o-Xylene	<0.00199	U	0.0996	0.09682		mg/Kg		97	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

Lab Sample ID: 890-5093-A-1-F MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 60348

Prep Batch: 60364

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.0990	0.09479		mg/Kg		96	70 - 130	13	35
Toluene	<0.00199	U	0.0990	0.09212		mg/Kg		93	70 - 130	9	35
Ethylbenzene	<0.00199	U	0.0990	0.08281		mg/Kg		84	70 - 130	13	35
m-Xylene & p-Xylene	<0.00398	U	0.198	0.1712		mg/Kg		86	70 - 130	18	35
o-Xylene	<0.00199	U	0.0990	0.08238		mg/Kg		83	70 - 130	16	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	93		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

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

Lab Sample ID: MB 880-60324/1-A

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 60424

Prep Batch: 60324

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/15/23 16:46	08/17/23 10:56	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/15/23 16:46	08/17/23 10:56	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/15/23 16:46	08/17/23 10:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	118		70 - 130	08/15/23 16:46	08/17/23 10:56	1
o-Terphenyl	129		70 - 130	08/15/23 16:46	08/17/23 10:56	1

Lab Sample ID: LCS 880-60324/2-A

Client Sample ID: Lab Control Sample

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 60424

Prep Batch: 60324

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1043		mg/Kg		104	70 - 130
Diesel Range Organics (Over C10-C28)	1000	906.2		mg/Kg		91	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-5053-1
SDG: 03C1558256

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

Lab Sample ID: LCS 880-60324/2-A

Matrix: Solid

Analysis Batch: 60424

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 60324

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	113		70 - 130
o-Terphenyl	125		70 - 130

Lab Sample ID: LCSD 880-60324/3-A

Matrix: Solid

Analysis Batch: 60424

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 60324

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1021		mg/Kg		102	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	1000	898.3		mg/Kg		90	70 - 130	1	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	118		70 - 130
o-Terphenyl	131	S1+	70 - 130

Lab Sample ID: 880-31596-A-1-D MS

Matrix: Solid

Analysis Batch: 60424

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 60324

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.1	U	1010	1079		mg/Kg		105	70 - 130
Diesel Range Organics (Over C10-C28)	70.3	F1	1010	752.3	F1	mg/Kg		68	70 - 130

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

Lab Sample ID: 880-31596-A-1-E MSD

Matrix: Solid

Analysis Batch: 60424

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 60324

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.1	U	1010	1010		mg/Kg		98	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	70.3	F1	1010	712.7	F1	mg/Kg		64	70 - 130	5	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	84		70 - 130
o-Terphenyl	80		70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-5053-1
SDG: 03C1558256

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-59733/1-A Matrix: Solid Analysis Batch: 59912										Client Sample ID: Method Blank Prep Type: Soluble			
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac					
Chloride	<5.00	U	5.00	mg/Kg			08/11/23 10:10	1					
Lab Sample ID: LCS 880-59733/2-A Matrix: Solid Analysis Batch: 59912										Client Sample ID: Lab Control Sample Prep Type: Soluble			
Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits				
Chloride			250	269.1		mg/Kg		108	90 - 110				
Lab Sample ID: LCSD 880-59733/3-A Matrix: Solid Analysis Batch: 59912										Client Sample ID: Lab Control Sample Dup Prep Type: Soluble			
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit		
Chloride			250	269.8		mg/Kg		108	90 - 110	0	20		
Lab Sample ID: 890-5053-1 MS Matrix: Solid Analysis Batch: 59912										Client Sample ID: SW01 Prep Type: Soluble			
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits				
Chloride	738		251	993.6		mg/Kg		102	90 - 110				
Lab Sample ID: 890-5053-1 MSD Matrix: Solid Analysis Batch: 59912										Client Sample ID: SW01 Prep Type: Soluble			
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit		
Chloride	738		251	988.0		mg/Kg		100	90 - 110	1	20		

QC Association Summary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-5053-1
SDG: 03C1558256

GC VOA

Analysis Batch: 60348

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5053-1	SW01	Total/NA	Solid	8021B	60364
MB 880-60364/5-A	Method Blank	Total/NA	Solid	8021B	60364
LCS 880-60364/1-A	Lab Control Sample	Total/NA	Solid	8021B	60364
LCSD 880-60364/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	60364
890-5093-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	60364
890-5093-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	60364

Prep Batch: 60364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5053-1	SW01	Total/NA	Solid	5035	
MB 880-60364/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-60364/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-60364/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5093-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
890-5093-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 60443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5053-1	SW01	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 60324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5053-1	SW01	Total/NA	Solid	8015NM Prep	
MB 880-60324/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-60324/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-60324/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-31596-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-31596-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 60424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5053-1	SW01	Total/NA	Solid	8015B NM	60324
MB 880-60324/1-A	Method Blank	Total/NA	Solid	8015B NM	60324
LCS 880-60324/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	60324
LCSD 880-60324/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	60324
880-31596-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	60324
880-31596-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	60324

Analysis Batch: 60557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5053-1	SW01	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 59733

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5053-1	SW01	Soluble	Solid	DI Leach	
MB 880-59733/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-59733/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-59733/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

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QC Association Summary

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-5053-1
SDG: 03C1558256

HPLC/IC (Continued)

Leach Batch: 59733 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5053-1 MS	SW01	Soluble	Solid	DI Leach	
890-5053-1 MSD	SW01	Soluble	Solid	DI Leach	

Analysis Batch: 59912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5053-1	SW01	Soluble	Solid	300.0	59733
MB 880-59733/1-A	Method Blank	Soluble	Solid	300.0	59733
LCS 880-59733/2-A	Lab Control Sample	Soluble	Solid	300.0	59733
LCSD 880-59733/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	59733
890-5053-1 MS	SW01	Soluble	Solid	300.0	59733
890-5053-1 MSD	SW01	Soluble	Solid	300.0	59733

Lab Chronicle

Client: Ensolum
Project/Site: James Ranch Unit 19 Battery

Job ID: 890-5053-1
SDG: 03C1558256

Client Sample ID: SW01
Date Collected: 08/03/23 13:30
Date Received: 08/08/23 14:10

Lab Sample ID: 890-5053-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	60364	08/16/23 09:58	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	60348	08/16/23 20:43	SM	EET MID
Total/NA	Analysis	Total BTEX		1			60443	08/17/23 10:00	SM	EET MID
Total/NA	Analysis	8015 NM		1			60557	08/18/23 10:13	SM	EET MID
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	60324	08/15/23 16:47	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	60424	08/17/23 16:48	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	59733	08/09/23 09:49	KS	EET MID
Soluble	Analysis	300.0		1			59912	08/11/23 10:31	SMC	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: James Ranch Unit 19 Battery

Job ID: 890-5053-1
SDG: 03C1558256

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Ensolum

Job ID: 890-5053-1

Project/Site: James Ranch Unit 19 Battery

SDG: 03C1558256

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: James Ranch Unit 19 Battery

Job ID: 890-5053-1
SDG: 03C1558256

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5053-1	SW01	Solid	08/03/23 13:30	08/08/23 14:10	0 - 1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14



Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1266
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: _____

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Project Manager:	James R Ben Ball	Garrett Green
Company Name:	Ensculum, LLC	
Address:	3122 Nati Parks Hwy	XTD Energy
City, State ZIP:	Carlsbad, NM 88220	3104 E Greene St
Phone:	989-854-0852	Carlsbad NM 88220
	Email:	bball111@ensculum.com

Work Order Comments				
Program:	UST/PST ☐	PBP ☐	Brownfields ☐	RRC ☐ Superfund ☐
State of Project:				
Reporting:	Level II ☐	Level III ☐	PST/UST ☐	TRRP ☐ Level IV ☐
Deliverables:	EDD ☐	Adapt ☐	Other:	

[illegible]

Total 2003/7/6010	2003/8/6020:	
8RCRA 13PPM Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn	
TC1P/SPLP 6010 : 8RCRA 5b As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U		Hg: 1631/245.1/7470/7471

Notice: Signature of this document constitutes a valid purchase order from client company to Eurofins Xeno, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xeno 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 Xeno. A minimum charge of \$85.00 will be applied to each project and a charge of \$3 for each sample submitted to Eurofins Xeno, but not analyzed. These terms will be enforced unless previously negated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	8.8.23 1410			

Printed Date: 02/07/2023 10:03

2025

Carlsbad NM 88220
Phone. 575-988-3199 Fax. 575-988-3199

Chain of Custody Record



eurofins

Environment Testing

Client Information (Sub Contract Lab)						Sampler
Shipping/Receiving						Lab PM Kramer, Jessica
Company Eurofins Environment Testing South Cent						E-Mail Jessica.Kramer@et.eurofins.com
Address: 1211 W Florida Ave						Accreditations Required (See note): NELAP - Texas
City: Midland						Carrier Tracking No(s) 890-1419 1
State, Zip TX 79701						COC No. Page 1 of 1
Phone: 432-704-5440(Tel)						Job # 890-5053-1
Email WQ #:						
Project Name James Ranch Unit 19 Battery						
Site: SSOW#:						
Sample Identification - Client ID (Lab ID)						
SW01 (890-5053-1)						
Sample Date 8/3/23						
Sample Time 13 30						
Sample Type (C=comp, G=grab)						
Matrix (W=water S=solid O=wastobol BT=Tissue A=Air)						
Preservation Code Solid						
Field Filtered Sample (Yes or No)						
Perform MS/MSD (Yes or No)						
8015MOD_NM/8015NM_S_Prep (MOD) Full TPH						
8015MOD_Calc						
300_ORGFM_28D/DI_LEACH Chloride						
8021B/5035FP_Calc (MOD) BTEX						
Total_BTEX_GCV						
Total Number of containers						
Special Instructions/Note.						
Preservation Codes						
A - HCL M - Hexane						
B - NaOH N - None						
C - Zn Acetate O - AshNaO2						
D - Nitric Acid P - Na2OAS						
E - NaHSO4 Q - Na2SO3						
F - MeOH R - Na2S2O3						
G - Amchlor S - H2SO4						
H - Ascorbic Acid T - TSP Dodecalhydrate						
I - Ice U - Acetone						
J - DI Water V - MCAA						
K - EDTA W - pH 4.5						
L - EDA Y - Trizma						
Z - other (specify)						
Other						

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5053-1

SDG Number: 03C1558256

Login Number: 5053

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5053-1

SDG Number: 03C1558256

Login Number: 5053

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 08/10/23 12:57 PM

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	



APPENDIX D

Lithologic Soil Sampling Logs

							Sample Name: BH01		Date: 07/20/2023	
							Site Name: James Ranch Unit 19 Battery			
							Incident Number: nAPP2317142256			
							Job Number: 03C1558256			
LITHOLOGIC / SOIL SAMPLING LOG							Logged By: Mariaha O'Dell		Method: Hand Auger	
Coordinates: 32.346594, -103.832484							Hole Diameter: 6"		Total Depth: 4'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. All Chloride measurements done with a +40% correction factor.										
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions		
						0				
D	4,552.8	0.0	N		1	1	SW	Reddish brown sand, very fine to fine grained, well graded, trace CCHE		
D	660.8	0.0	N		2	2		Reddish brown sand, very fine to fine grained, well graded.		
M	3,852.8	0.0	N		3	3	SP	Reddish brown sand, very fine to fine grained, poorly graded.		
M	212.8	0.0	N	BH01	4	4				
Total Depth @ 4' bgs.										

								Sample Name: BH02		Date: 07/20/2023	
								Site Name: James Ranch Unit 19 Battery			
								Incident Number: nAPP2317142256			
								Job Number: 03C1558256			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: Mariaha O'Dell		Method: Hand Auger	
Coordinates: 32.346577, -103.832399								Hole Diameter: 6"		Total Depth: 2'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. All Chloride measurements done with a +40% correction factor.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
						0					
D	403.2	0.0	N		1	1	SW	Reddish brown sand, very fine to fine grained, well graded, trace CCHE			
D	<179	0.0	N	BH02	2	2	SP	Reddish brown sand, very fine to fine grained, poorly graded.			
Total Depth @ 2' bgs.											



APPENDIX E

NMOCD Notifications/Correspondence

From: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Sent: Friday, July 14, 2023 9:44 AM
To: Collins, Melanie <melanie.collins@exxonmobil.com>
Cc: Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>
Subject: RE: [EXTERNAL] Updated XTO - Sampling Notification (Week of 7/17/23 - 7/21/23)

External Email – Think Before You Click

Melanie,

Notification requirements are **two business days**, per rule. You may proceed on your schedule. The OCD has received your notification. When reporting sampling at multiple locations it is required to provide a date and time for each location. 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.

JH

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



From: Collins, Melanie <melanie.collins@exxonmobil.com>
Sent: Thursday, July 13, 2023 2:56 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>; Harimon, Jocelyn, EMNRD <Jocelyn.Harimon@emnrd.nm.gov>
Cc: spills@slo.state.nm.us; Green, Garrett J <garrett.green@exxonmobil.com>
Subject: [EXTERNAL] Updated XTO - Sampling Notification (Week of 7/17/23 - 7/21/23)

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

All,

XTO plans to complete final sampling activities at the sites listed below for the week of July 17, 2023.

Tuesday 7/18/23

- PLU 183Q / nAPP2315133557
- Remuda 500 Tank Battery / nAPP2317850727 (SLO)

Wednesday 7/19/23

- PLU 224 / nAPP2310050120
- Remuda 500 Tank Battery / nAPP2317850727 (SLO)

Thursday 7/20/23

- PLU 224 / nAPP2310050120
- James Ranch Unit 19 Battery / nAPP2317142256 (SLO)

Friday 7/21/23

- James Ranch Unit 19 Battery / nAPP2317142256 (SLO)

Thank you,

Melanie Collins



Environmental Technician

melanie.collins@exxonmobil.com

432-556-3756



APPENDIX B

Lithologic Soil Sampling Logs

 ENSOLUM		Sample Name: BH03		Date: 03/01/2024				
		Site Name: James Ranch Unit 19 Battery						
		Incident Number: nAPP2317142256						
		Job Number: 03C1558256						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.3465765, -103.8324391			Logged By: Mariaha O'Dell		Method: Hand Auger			
			Hole Diameter: 6"		Total Depth: 4'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. All Chloride measurements done with a +40% correction factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	408	0.0	N	BH03	0.5	0.5	SW	Reddish brown sand, very fine to fine grained, well graded, trace CCHE
D	<168	0.0	N	BH03A	1	1		
D	<168	0.0	N			2		
M	<168	0.0	N			3	SP	Reddish brown sand, very fine to fine grained, poorly graded.
M	408	0.0	N	BH03B	4	4		
Total Depth @ 4' bgs.								

 ENSOLUM		Sample Name: BH04		Date: 03/01/2024				
		Site Name: James Ranch Unit 19 Battery						
		Incident Number: nAPP2317142256						
		Job Number: 03C1558256						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.3465502, -103.8325137			Logged By: Mariaha O'Dell		Method: Hand Auger			
			Hole Diameter: 6"		Total Depth: 4'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. All Chloride measurements done with a +40% correction factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	<168	0.1	N	BH04	0.5	0.5	SW	Reddish brown sand, very fine to fine grained, well graded, trace CCHE
D	<168	0.0	N	BH04A	1	1		
D	<168	0.0	N			2		
M	<168	0.0	N			3	SP	Reddish brown sand, very fine to fine grained, poorly graded.
M	<168	0.0	N	BH04B	4	4		
Total Depth @ 4' bgs.								



APPENDIX C

Photographic Log



Photographic Log

XTO Energy, Inc
James Ranch Unit 19 Tank Battery
NAPP2317142256



Photograph 1 Date: 7/20/2023
Description: Final excavation extent
View: North



Photograph 2 Date: 3/1/2024
Description: Location of BH03
View: Northeast



Photograph 3 Date: 3/1/2024
Description: Location of BH04
View: Northeast



Photograph 4 Date: 3/1/2024
Description: BH03 and release area
View: Southwest



APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 3/11/2024 8:46:07 AM

JOB DESCRIPTION

JAMES RANCH UNIT 19 BATTERY

03C1558256

JOB NUMBER

890-6301-1

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
3/11/2024 8:46:07 AM

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

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Laboratory Job ID: 890-6301-1
SDG: 03C1558256

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Definitions/Glossary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

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
*1	LCS/LCSD RPD exceeds control limits.
F1	MS and/or MSD recovery exceeds control limits.
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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Ensolum
Project: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1

Job ID: 890-6301-1

Eurofins Carlsbad

Job Narrative 890-6301-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 3/1/2024 1:54 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.0°C.

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: SS08 (890-6301-1), SS09 (890-6301-2), SS10 (890-6301-3) and SS11 (890-6301-4).

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-74680 and analytical batch 880-74853 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: The surrogate recovery for the blank associated with preparation batch 880-74680 and 880-74687 and analytical batch 880-74853 was outside the control limits.

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

GC Semi VOA

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-74886 and analytical batch 880-74861 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10.

Method 8015MOD_NM: The matrix spike duplicate (MSD) recoveries for preparation batch 880-74886 and analytical batch 880-74861 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8015MOD_NM: The continuing calibration verification (CCV) associated with batch 880-74861 recovered below the lower control limit for Gasoline Range Organics (GRO)-C6-C10. An acceptable CCV was ran within the 12 hour window, therefore the data has been qualified and reported. The associated sample is impacted: (CCV 880-74861/58).

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 - Soluble: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-74623 and analytical batch 880-74898 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.

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

Client Sample ID: SS08

Lab Sample ID: 890-6301-1

Date Collected: 03/01/24 10:45

Matrix: Solid

Date Received: 03/01/24 13:54

Sample Depth: .5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		03/04/24 15:01	03/07/24 10:26	1
Toluene	<0.00199	U	0.00199	mg/Kg		03/04/24 15:01	03/07/24 10:26	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		03/04/24 15:01	03/07/24 10:26	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		03/04/24 15:01	03/07/24 10:26	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		03/04/24 15:01	03/07/24 10:26	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		03/04/24 15:01	03/07/24 10:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130	03/04/24 15:01	03/07/24 10:26	1
1,4-Difluorobenzene (Surr)	92		70 - 130	03/04/24 15:01	03/07/24 10:26	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			03/07/24 10:26	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5	mg/Kg			03/06/24 23:55	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.5	U *1	50.5	mg/Kg		03/06/24 15:53	03/06/24 23:55	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5	mg/Kg		03/06/24 15:53	03/06/24 23:55	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		03/06/24 15:53	03/06/24 23:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	106		70 - 130	03/06/24 15:53	03/06/24 23:55	1
o-Terphenyl	93		70 - 130	03/06/24 15:53	03/06/24 23:55	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	360		24.9	mg/Kg			03/10/24 17:33	5

Client Sample ID: SS09

Lab Sample ID: 890-6301-2

Date Collected: 03/01/24 10:50

Matrix: Solid

Date Received: 03/01/24 13:54

Sample Depth: .5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		03/04/24 15:01	03/07/24 10:53	1
Toluene	<0.00199	U	0.00199	mg/Kg		03/04/24 15:01	03/07/24 10:53	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		03/04/24 15:01	03/07/24 10:53	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		03/04/24 15:01	03/07/24 10:53	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		03/04/24 15:01	03/07/24 10:53	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		03/04/24 15:01	03/07/24 10:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	119		70 - 130	03/04/24 15:01	03/07/24 10:53	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

Client Sample ID: SS09

Lab Sample ID: 890-6301-2

Date Collected: 03/01/24 10:50

Matrix: Solid

Date Received: 03/01/24 13:54

Sample Depth: .5

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	97		70 - 130	03/04/24 15:01	03/07/24 10:53	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			03/07/24 10:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7	mg/Kg			03/07/24 00:16	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.7	U *1	49.7	mg/Kg		03/06/24 15:53	03/07/24 00:16	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7	mg/Kg		03/06/24 15:53	03/07/24 00:16	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		03/06/24 15:53	03/07/24 00:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	115		70 - 130			03/06/24 15:53	03/07/24 00:16	1
o-Terphenyl	94		70 - 130			03/06/24 15:53	03/07/24 00:16	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	54.6		5.00	mg/Kg			03/10/24 17:39	1

Client Sample ID: SS10

Lab Sample ID: 890-6301-3

Date Collected: 03/01/24 10:55

Matrix: Solid

Date Received: 03/01/24 13:54

Sample Depth: .5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		03/04/24 15:01	03/07/24 11:20	1
Toluene	<0.00198	U	0.00198	mg/Kg		03/04/24 15:01	03/07/24 11:20	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		03/04/24 15:01	03/07/24 11:20	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		03/04/24 15:01	03/07/24 11:20	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		03/04/24 15:01	03/07/24 11:20	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		03/04/24 15:01	03/07/24 11:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130			03/04/24 15:01	03/07/24 11:20	1
1,4-Difluorobenzene (Surr)	94		70 - 130			03/04/24 15:01	03/07/24 11:20	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			03/07/24 11:20	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			03/07/24 00:38	1

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Client Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

Client Sample ID: SS10

Lab Sample ID: 890-6301-3

Date Collected: 03/01/24 10:55

Matrix: Solid

Date Received: 03/01/24 13:54

Sample Depth: .5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *1	50.0	mg/Kg		03/06/24 15:53	03/07/24 00:38	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		03/06/24 15:53	03/07/24 00:38	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		03/06/24 15:53	03/07/24 00:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	109		70 - 130			03/06/24 15:53	03/07/24 00:38	1
o-Terphenyl	98		70 - 130			03/06/24 15:53	03/07/24 00:38	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	197		5.04	mg/Kg			03/10/24 17:45	1

Client Sample ID: SS11

Lab Sample ID: 890-6301-4

Date Collected: 03/01/24 11:00

Matrix: Solid

Date Received: 03/01/24 13:54

Sample Depth: .5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:01	03/07/24 11:46	1
Toluene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:01	03/07/24 11:46	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:01	03/07/24 11:46	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		03/04/24 15:01	03/07/24 11:46	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:01	03/07/24 11:46	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		03/04/24 15:01	03/07/24 11:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	124		70 - 130			03/04/24 15:01	03/07/24 11:46	1
1,4-Difluorobenzene (Surr)	91		70 - 130			03/04/24 15:01	03/07/24 11:46	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			03/07/24 11:46	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	57.8		50.2	mg/Kg			03/07/24 01:20	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.2	U *1	50.2	mg/Kg		03/06/24 15:53	03/07/24 01:20	1
Diesel Range Organics (Over C10-C28)	57.8		50.2	mg/Kg		03/06/24 15:53	03/07/24 01:20	1
Oil Range Organics (Over C28-C36)	<50.2	U	50.2	mg/Kg		03/06/24 15:53	03/07/24 01:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	126		70 - 130			03/06/24 15:53	03/07/24 01:20	1
o-Terphenyl	108		70 - 130			03/06/24 15:53	03/07/24 01:20	1

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Client Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

Client Sample ID: SS11
Date Collected: 03/01/24 11:00
Date Received: 03/01/24 13:54
Sample Depth: .5

Lab Sample ID: 890-6301-4
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	85.4		5.02	mg/Kg			03/10/24 17:51	1	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Surrogate Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-40172-A-1-A MS	Matrix Spike	119	100
880-40172-A-1-B MSD	Matrix Spike Duplicate	120	90
890-6301-1	SS08	106	92
890-6301-2	SS09	119	97
890-6301-3	SS10	107	94
890-6301-4	SS11	124	91
LCS 880-74680/1-A	Lab Control Sample	118	111
LCSD 880-74680/2-A	Lab Control Sample Dup	126	113
MB 880-74680/5-A	Method Blank	65 S1-	87
MB 880-74687/5-A	Method Blank	65 S1-	87
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-40358-A-1-B MS	Matrix Spike	105	84
880-40358-A-1-C MSD	Matrix Spike Duplicate	125	98
890-6301-1	SS08	106	93
890-6301-2	SS09	115	94
890-6301-3	SS10	109	98
890-6301-4	SS11	126	108
LCS 880-74886/2-A	Lab Control Sample	81	72
LCSD 880-74886/3-A	Lab Control Sample Dup	93	79
MB 880-74886/1-A	Method Blank	98	89
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-74680/5-A

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74680

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:01	03/07/24 01:50	1
Toluene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:01	03/07/24 01:50	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:01	03/07/24 01:50	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		03/04/24 15:01	03/07/24 01:50	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:01	03/07/24 01:50	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		03/04/24 15:01	03/07/24 01:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	65	S1-	70 - 130	03/04/24 15:01	03/07/24 01:50	1
1,4-Difluorobenzene (Surr)	87		70 - 130	03/04/24 15:01	03/07/24 01:50	1

Lab Sample ID: LCS 880-74680/1-A

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 74680

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1062		mg/Kg		106	70 - 130
Toluene	0.100	0.1001		mg/Kg		100	70 - 130
Ethylbenzene	0.100	0.1057		mg/Kg		106	70 - 130
m-Xylene & p-Xylene	0.200	0.2127		mg/Kg		106	70 - 130
o-Xylene	0.100	0.1088		mg/Kg		109	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	118		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

Lab Sample ID: LCSD 880-74680/2-A

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 74680

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09101		mg/Kg		91	70 - 130	15	35
Toluene	0.100	0.08726		mg/Kg		87	70 - 130	14	35
Ethylbenzene	0.100	0.09103		mg/Kg		91	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.1832		mg/Kg		92	70 - 130	15	35
o-Xylene	0.100	0.09642		mg/Kg		96	70 - 130	12	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	126		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: 880-40172-A-1-A MS

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 74680

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U F1	0.101	0.06546	F1	mg/Kg		65	70 - 130
Toluene	<0.00199	U F1	0.101	0.06759	F1	mg/Kg		67	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

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

Lab Sample ID: 880-40172-A-1-A MS

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 74680

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.101	0.07282		mg/Kg		72	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.202	0.1430		mg/Kg		71	70 - 130
o-Xylene	<0.00199	U	0.101	0.07651		mg/Kg		76	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	119		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 880-40172-A-1-B MSD

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 74680

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U F1	0.100	0.06834	F1	mg/Kg		68	70 - 130	4	35
Toluene	<0.00199	U F1	0.100	0.07256		mg/Kg		73	70 - 130	7	35
Ethylbenzene	<0.00199	U	0.100	0.07805		mg/Kg		78	70 - 130	7	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1512		mg/Kg		76	70 - 130	6	35
o-Xylene	<0.00199	U	0.100	0.08226		mg/Kg		82	70 - 130	7	35

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	120		70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

Lab Sample ID: MB 880-74687/5-A

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74687

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:15	03/06/24 11:51	1
Toluene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:15	03/06/24 11:51	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:15	03/06/24 11:51	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		03/04/24 15:15	03/06/24 11:51	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:15	03/06/24 11:51	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		03/04/24 15:15	03/06/24 11:51	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	65	S1-	70 - 130	03/04/24 15:15	03/06/24 11:51	1
1,4-Difluorobenzene (Surr)	87		70 - 130	03/04/24 15:15	03/06/24 11:51	1

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

Lab Sample ID: MB 880-74886/1-A

Matrix: Solid

Analysis Batch: 74861

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74886

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		03/06/24 12:10	03/06/24 19:35	1

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

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

Lab Sample ID: MB 880-74886/1-A

Matrix: Solid

Analysis Batch: 74861

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74886

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		03/06/24 12:10	03/06/24 19:35	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		03/06/24 12:10	03/06/24 19:35	1
Surrogate	MB	MB	Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
1-Chlorooctane	98		70 - 130			03/06/24 12:10	03/06/24 19:35	1
o-Terphenyl	89		70 - 130			03/06/24 12:10	03/06/24 19:35	1

Lab Sample ID: LCS 880-74886/2-A

Matrix: Solid

Analysis Batch: 74861

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 74886

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Gasoline Range Organics (GRO)-C6-C10	1000	1178		mg/Kg		118	70 - 130	
Diesel Range Organics (Over C10-C28)	1000	1021		mg/Kg		102	70 - 130	
Surrogate	LCS	LCS	Limits			%Recovery	Qualifier	
1-Chlorooctane			70 - 130			81		
o-Terphenyl			70 - 130			72		

Lab Sample ID: LCSD 880-74886/3-A

Matrix: Solid

Analysis Batch: 74861

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 74886

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	819.9	*1	mg/Kg		82	70 - 130	36	20
Diesel Range Organics (Over C10-C28)	1000	1142		mg/Kg		114	70 - 130	11	20
Surrogate	LCSD	LCSD	Limits			%Recovery	Qualifier		
1-Chlorooctane			70 - 130			93			
o-Terphenyl			70 - 130			79			

Lab Sample ID: 880-40358-A-1-B MS

Matrix: Solid

Analysis Batch: 74861

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 74886

Analyte	Sample	Sample	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	
	Result	Qualifier								
Gasoline Range Organics (GRO)-C6-C10	<50.4	U *1 F1	1010	1251		mg/Kg		120	70 - 130	
Diesel Range Organics (Over C10-C28)	<50.4	U	1010	984.5		mg/Kg		94	70 - 130	
Surrogate	MS	MS	Limits			%Recovery	Qualifier			
1-Chlorooctane			70 - 130			105				
o-Terphenyl			70 - 130			84				

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

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

Lab Sample ID: 880-40358-A-1-C MSD

Matrix: Solid

Analysis Batch: 74861

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 74886

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.4	U *1 F1	1010	1371	F1	mg/Kg		132	70 - 130	9	20
Diesel Range Organics (Over C10-C28)	<50.4	U	1010	1160		mg/Kg		111	70 - 130	16	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	125		70 - 130								
o-Terphenyl	98		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-74623/1-A

Matrix: Solid

Analysis Batch: 74898

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			03/10/24 14:58	1

Lab Sample ID: LCS 880-74623/2-A

Matrix: Solid

Analysis Batch: 74898

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	260.3		mg/Kg		104	90 - 110

Lab Sample ID: LCSD 880-74623/3-A

Matrix: Solid

Analysis Batch: 74898

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	259.4		mg/Kg		104	90 - 110	0	20

Lab Sample ID: 880-40225-A-1-B MS

Matrix: Solid

Analysis Batch: 74898

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	36.4		250	296.5		mg/Kg		104	90 - 110

Lab Sample ID: 880-40225-A-1-C MSD

Matrix: Solid

Analysis Batch: 74898

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	36.4		250	294.8		mg/Kg		104	90 - 110	1	20

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-40230-A-11-B MS										Client Sample ID: Matrix Spike			
Matrix: Solid										Prep Type: Soluble			
Analysis Batch: 74898													
	Sample	Sample	Spike	MS	MS				%Rec				
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits				
Chloride	23000	F1	12500	37010	F1	mg/Kg		112	90 - 110				

Lab Sample ID: 880-40230-A-11-C MSD										Client Sample ID: Matrix Spike Duplicate			
Matrix: Solid										Prep Type: Soluble			
Analysis Batch: 74898													
	Sample	Sample	Spike	MSD	MSD				%Rec			RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD		Limit	
Chloride	23000	F1	12500	36910	F1	mg/Kg		112	90 - 110	0		20	

QC Association Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

GC VOA

Prep Batch: 74680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6301-1	SS08	Total/NA	Solid	5035	
890-6301-2	SS09	Total/NA	Solid	5035	
890-6301-3	SS10	Total/NA	Solid	5035	
890-6301-4	SS11	Total/NA	Solid	5035	
MB 880-74680/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-74680/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-74680/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-40172-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-40172-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 74687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-74687/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 74853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6301-1	SS08	Total/NA	Solid	8021B	74680
890-6301-2	SS09	Total/NA	Solid	8021B	74680
890-6301-3	SS10	Total/NA	Solid	8021B	74680
890-6301-4	SS11	Total/NA	Solid	8021B	74680
MB 880-74680/5-A	Method Blank	Total/NA	Solid	8021B	74680
MB 880-74687/5-A	Method Blank	Total/NA	Solid	8021B	74687
LCS 880-74680/1-A	Lab Control Sample	Total/NA	Solid	8021B	74680
LCSD 880-74680/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	74680
880-40172-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	74680
880-40172-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	74680

Analysis Batch: 74994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6301-1	SS08	Total/NA	Solid	Total BTEX	
890-6301-2	SS09	Total/NA	Solid	Total BTEX	
890-6301-3	SS10	Total/NA	Solid	Total BTEX	
890-6301-4	SS11	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 74861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6301-1	SS08	Total/NA	Solid	8015B NM	74886
890-6301-2	SS09	Total/NA	Solid	8015B NM	74886
890-6301-3	SS10	Total/NA	Solid	8015B NM	74886
890-6301-4	SS11	Total/NA	Solid	8015B NM	74886
MB 880-74886/1-A	Method Blank	Total/NA	Solid	8015B NM	74886
LCS 880-74886/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	74886
LCSD 880-74886/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	74886
880-40358-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	74886
880-40358-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	74886

Prep Batch: 74886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6301-1	SS08	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

GC Semi VOA (Continued)

Prep Batch: 74886 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6301-2	SS09	Total/NA	Solid	8015NM Prep	
890-6301-3	SS10	Total/NA	Solid	8015NM Prep	
890-6301-4	SS11	Total/NA	Solid	8015NM Prep	
MB 880-74886/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-74886/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-74886/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-40358-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-40358-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 75011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6301-1	SS08	Total/NA	Solid	8015 NM	
890-6301-2	SS09	Total/NA	Solid	8015 NM	
890-6301-3	SS10	Total/NA	Solid	8015 NM	
890-6301-4	SS11	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 74623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6301-1	SS08	Soluble	Solid	DI Leach	
890-6301-2	SS09	Soluble	Solid	DI Leach	
890-6301-3	SS10	Soluble	Solid	DI Leach	
890-6301-4	SS11	Soluble	Solid	DI Leach	
MB 880-74623/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-74623/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-74623/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-40225-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-40225-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
880-40230-A-11-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-40230-A-11-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 74898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6301-1	SS08	Soluble	Solid	300.0	74623
890-6301-2	SS09	Soluble	Solid	300.0	74623
890-6301-3	SS10	Soluble	Solid	300.0	74623
890-6301-4	SS11	Soluble	Solid	300.0	74623
MB 880-74623/1-A	Method Blank	Soluble	Solid	300.0	74623
LCS 880-74623/2-A	Lab Control Sample	Soluble	Solid	300.0	74623
LCSD 880-74623/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	74623
880-40225-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	74623
880-40225-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	74623
880-40230-A-11-B MS	Matrix Spike	Soluble	Solid	300.0	74623
880-40230-A-11-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	74623

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Lab Chronicle

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

Client Sample ID: SS08

Date Collected: 03/01/24 10:45

Date Received: 03/01/24 13:54

Lab Sample ID: 890-6301-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	74680	03/04/24 15:01	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	74853	03/07/24 10:26	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			74994	03/07/24 10:26	SM	EET MID
Total/NA	Analysis	8015 NM		1			75011	03/06/24 23:55	SM	EET MID
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	74886	03/06/24 15:53	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	74861	03/06/24 23:55	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	74623	03/04/24 11:54	SMC	EET MID
Soluble	Analysis	300.0		5			74898	03/10/24 17:33	CH	EET MID

Client Sample ID: SS09

Date Collected: 03/01/24 10:50

Date Received: 03/01/24 13:54

Lab Sample ID: 890-6301-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	74680	03/04/24 15:01	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	74853	03/07/24 10:53	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			74994	03/07/24 10:53	SM	EET MID
Total/NA	Analysis	8015 NM		1			75011	03/07/24 00:16	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	74886	03/06/24 15:53	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	74861	03/07/24 00:16	SM	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	74623	03/04/24 11:54	SMC	EET MID
Soluble	Analysis	300.0		1			74898	03/10/24 17:39	CH	EET MID

Client Sample ID: SS10

Date Collected: 03/01/24 10:55

Date Received: 03/01/24 13:54

Lab Sample ID: 890-6301-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	74680	03/04/24 15:01	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	74853	03/07/24 11:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			74994	03/07/24 11:20	SM	EET MID
Total/NA	Analysis	8015 NM		1			75011	03/07/24 00:38	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	74886	03/06/24 15:53	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	74861	03/07/24 00:38	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	74623	03/04/24 11:54	SMC	EET MID
Soluble	Analysis	300.0		1			74898	03/10/24 17:45	CH	EET MID

Client Sample ID: SS11

Date Collected: 03/01/24 11:00

Date Received: 03/01/24 13:54

Lab Sample ID: 890-6301-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	74680	03/04/24 15:01	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	74853	03/07/24 11:46	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			74994	03/07/24 11:46	SM	EET MID

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Lab Chronicle

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

Client Sample ID: SS11

Date Collected: 03/01/24 11:00

Date Received: 03/01/24 13:54

Lab Sample ID: 890-6301-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			75011	03/07/24 01:20	SM	EET MID
Total/NA	Prep	8015NM Prep			9.97 g	10 mL	74886	03/06/24 15:53	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	74861	03/07/24 01:20	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	74623	03/04/24 11:54	SMC	EET MID
Soluble	Analysis	300.0		1			74898	03/10/24 17:51	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
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

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: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6301-1
SDG: 03C1558256

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-6301-1	SS08	Solid	03/01/24 10:45	03/01/24 13:54	.5
890-6301-2	SS09	Solid	03/01/24 10:50	03/01/24 13:54	.5
890-6301-3	SS10	Solid	03/01/24 10:55	03/01/24 13:54	.5
890-6301-4	SS11	Solid	03/01/24 11:00	03/01/24 13:54	.5

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Environment Testing
Xenco

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7350, Carlsbad, NM (575) 988-3199

Chain of Custody

Work Order No: _____

www.xenco.com Page ____ of ____

Project Manager:	Ben Bellill	Bill to: (if different)	Amy Ruth
Company Name:	Ensolm	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Amy.Ruth@ExxonMobil.com

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

Project Name:	James Ranch Unit 19 Battery	Turn Around	☒ Routine ☐ Rush	Pres. Code	
Project Number:	03C1558256	Due Date:			
Project Location:		TAT starts the day received by the lab, if received by 4:30pm			
Sampler's Name:	Connor Whitman	Wellce:	☒ Yes ☐ No		
PO #:		Thermometer ID:	444007		
SAMPLE RECEIPT	Temp Blank:	Yes	No		
Samples Received Intact:	Yes	No	N/A		
Cooler Custody Seals:	Yes	No	Correction Factor:		
Sample Custody Seals:	Yes	No	Temperature Reading:		
Total Containers:		Corrected Temperature:	0.0		



890-6301 Chain of Custody

Preservative Codes	None: NO	DI Water: H ₂ O
	Cool: Cool	MeOH: Me
	HCL: HC	HNO ₃ : HN
	H ₂ SO ₄ : H ₂	NaOH: Na
	H ₃ PO ₄ : HP	
	NaHSO ₄ : NABIS	
	Na ₂ S ₂ O ₃ : NASO ₃	
	Zn Acetate+NaOH: Zn	
	NaOH+Ascorbic Acid: SAPC	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters
508	C	3/1/24	1045	.5	G	1	CHLORIDES (EPA: 3000.0)
509			1050				TPH (8015)
510			1055				BTEX (8021)
511			1100				

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>Chen</i>		13:54 3/1			
3					
5					

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-6301-1

SDG Number: 03C1558256

Login Number: 6301

List Number: 1

Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	N/A	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: 890-6301-1

SDG Number: 03C1558256

Login Number: 6301

List Source: Eurofins Midland

List Number: 2

List Creation: 03/04/24 12:22 PM

Creator: Kramer, Jessica

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").	N/A	



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 3/11/2024 8:45:53 AM

JOB DESCRIPTION

JAMES RANCH UNIT 19 BATTERY

03C1558256

JOB NUMBER

890-6300-1

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
3/11/2024 8:45:53 AM

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

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Laboratory Job ID: 890-6300-1
SDG: 03C1558256

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Definitions/Glossary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6300-1
SDG: 03C1558256

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
F2	MS/MSD RPD exceeds control limits
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6300-1

Job ID: 890-6300-1

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Job Narrative 890-6300-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 3/1/2024 1:54 PM. 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 0.0°C.

Receipt Exceptions

The following sample was received and analyzed from an unpreserved bulk soil jar: SS12 (890-6300-1).

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-74680 and analytical batch 880-74853 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: The surrogate recovery for the blank associated with preparation batch 880-74680 and 880-74687 and analytical batch 880-74853 was outside the control limits.

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

GC Semi VOA

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (890-6298-A-30-C) and (890-6298-A-30-E 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 sample was outside control limits: SS12 (890-6300-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-74928 and analytical batch 880-74956 was outside control limits. Sample non-homogeneity is suspected.

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.

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Client Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6300-1
SDG: 03C1558256

Client Sample ID: SS12

Lab Sample ID: 890-6300-1

Date Collected: 03/01/24 11:10

Matrix: Solid

Date Received: 03/01/24 13:54

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		03/04/24 15:01	03/07/24 09:59	1
Toluene	<0.00201	U	0.00201	mg/Kg		03/04/24 15:01	03/07/24 09:59	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		03/04/24 15:01	03/07/24 09:59	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		03/04/24 15:01	03/07/24 09:59	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		03/04/24 15:01	03/07/24 09:59	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		03/04/24 15:01	03/07/24 09:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		70 - 130	03/04/24 15:01	03/07/24 09:59	1
1,4-Difluorobenzene (Surr)	88		70 - 130	03/04/24 15:01	03/07/24 09:59	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			03/07/24 09:59	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5	mg/Kg			03/07/24 19:07	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.5	U	50.5	mg/Kg		03/06/24 16:39	03/07/24 19:07	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5	mg/Kg		03/06/24 16:39	03/07/24 19:07	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		03/06/24 16:39	03/07/24 19:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	125		70 - 130	03/06/24 16:39	03/07/24 19:07	1
o-Terphenyl	136	S1+	70 - 130	03/06/24 16:39	03/07/24 19:07	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	345		5.00	mg/Kg			03/10/24 14:06	1

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Surrogate Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6300-1
SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)
Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-40172-A-1-A MS	Matrix Spike	119	100
880-40172-A-1-B MSD	Matrix Spike Duplicate	120	90
890-6300-1	SS12	110	88
LCS 880-74680/1-A	Lab Control Sample	118	111
LCSD 880-74680/2-A	Lab Control Sample Dup	126	113
MB 880-74680/5-A	Method Blank	65 S1-	87
MB 880-74687/5-A	Method Blank	65 S1-	87
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-6298-A-30-D MS	Matrix Spike	122	127
890-6298-A-30-E MSD	Matrix Spike Duplicate	147 S1+	151 S1+
890-6300-1	SS12	125	136 S1+
LCS 880-74928/2-A	Lab Control Sample	92	94
LCSD 880-74928/3-A	Lab Control Sample Dup	91	94
MB 880-74928/1-A	Method Blank	98	111
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6300-1
SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-74680/5-A

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74680

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:01	03/07/24 01:50	1
Toluene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:01	03/07/24 01:50	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:01	03/07/24 01:50	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		03/04/24 15:01	03/07/24 01:50	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:01	03/07/24 01:50	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		03/04/24 15:01	03/07/24 01:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	65	S1-	70 - 130	03/04/24 15:01	03/07/24 01:50	1
1,4-Difluorobenzene (Surr)	87		70 - 130	03/04/24 15:01	03/07/24 01:50	1

Lab Sample ID: LCS 880-74680/1-A

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 74680

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1062		mg/Kg		106	70 - 130
Toluene	0.100	0.1001		mg/Kg		100	70 - 130
Ethylbenzene	0.100	0.1057		mg/Kg		106	70 - 130
m-Xylene & p-Xylene	0.200	0.2127		mg/Kg		106	70 - 130
o-Xylene	0.100	0.1088		mg/Kg		109	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	118		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

Lab Sample ID: LCSD 880-74680/2-A

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 74680

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09101		mg/Kg		91	70 - 130	15	35
Toluene	0.100	0.08726		mg/Kg		87	70 - 130	14	35
Ethylbenzene	0.100	0.09103		mg/Kg		91	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.1832		mg/Kg		92	70 - 130	15	35
o-Xylene	0.100	0.09642		mg/Kg		96	70 - 130	12	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	126		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: 880-40172-A-1-A MS

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 74680

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U F1	0.101	0.06546	F1	mg/Kg		65	70 - 130
Toluene	<0.00199	U F1	0.101	0.06759	F1	mg/Kg		67	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6300-1
SDG: 03C1558256

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

Lab Sample ID: 880-40172-A-1-A MS

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 74680

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	
	Result	Qualifier	Added	Result	Qualifier				Limits	
Ethylbenzene	<0.00199	U	0.101	0.07282		mg/Kg		72	70 - 130	
m-Xylene & p-Xylene	<0.00398	U	0.202	0.1430		mg/Kg		71	70 - 130	
o-Xylene	<0.00199	U	0.101	0.07651		mg/Kg		76	70 - 130	

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	119		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 880-40172-A-1-B MSD

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 74680

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec		RPD	
	Result	Qualifier	Added	Result	Qualifier				Limits		RPD	Limit
Benzene	<0.00199	U F1	0.100	0.06834	F1	mg/Kg		68	70 - 130		4	35
Toluene	<0.00199	U F1	0.100	0.07256		mg/Kg		73	70 - 130		7	35
Ethylbenzene	<0.00199	U	0.100	0.07805		mg/Kg		78	70 - 130		7	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1512		mg/Kg		76	70 - 130		6	35
o-Xylene	<0.00199	U	0.100	0.08226		mg/Kg		82	70 - 130		7	35

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	120		70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

Lab Sample ID: MB 880-74687/5-A

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74687

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:15	03/06/24 11:51	1
Toluene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:15	03/06/24 11:51	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:15	03/06/24 11:51	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		03/04/24 15:15	03/06/24 11:51	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:15	03/06/24 11:51	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		03/04/24 15:15	03/06/24 11:51	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	65	S1-	70 - 130	03/04/24 15:15	03/06/24 11:51	1
1,4-Difluorobenzene (Surr)	87		70 - 130	03/04/24 15:15	03/06/24 11:51	1

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

Lab Sample ID: MB 880-74928/1-A

Matrix: Solid

Analysis Batch: 74956

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74928

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		03/06/24 16:39	03/07/24 08:02	1

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6300-1
SDG: 03C1558256

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

Lab Sample ID: MB 880-74928/1-A

Matrix: Solid

Analysis Batch: 74956

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74928

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		03/06/24 16:39	03/07/24 08:02	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		03/06/24 16:39	03/07/24 08:02	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		70 - 130			03/06/24 16:39	03/07/24 08:02	1
o-Terphenyl	111		70 - 130			03/06/24 16:39	03/07/24 08:02	1

Lab Sample ID: LCS 880-74928/2-A

Matrix: Solid

Analysis Batch: 74956

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 74928

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1102		mg/Kg		110	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1074		mg/Kg		107	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	92		70 - 130				
o-Terphenyl	94		70 - 130				

Lab Sample ID: LCSD 880-74928/3-A

Matrix: Solid

Analysis Batch: 74956

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 74928

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1066		mg/Kg		107	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	1000	1058		mg/Kg		106	70 - 130	2	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	91		70 - 130						
o-Terphenyl	94		70 - 130						

Lab Sample ID: 890-6298-A-30-D MS

Matrix: Solid

Analysis Batch: 74956

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 74928

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.7	U F2	1010	903.7		mg/Kg		85	70 - 130
Diesel Range Organics (Over C10-C28)	<49.7	U	1010	889.4		mg/Kg		84	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	122		70 - 130						
o-Terphenyl	127		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6300-1
SDG: 03C1558256

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

Lab Sample ID: 890-6298-A-30-E MSD

Matrix: Solid

Analysis Batch: 74956

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 74928

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.7	U F2	1010	1185	F2	mg/Kg		113	70 - 130	27	20
Diesel Range Organics (Over C10-C28)	<49.7	U	1010	1074		mg/Kg		102	70 - 130	19	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	147	S1+	70 - 130								
o-Terphenyl	151	S1+	70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-74631/1-A

Matrix: Solid

Analysis Batch: 75008

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			03/10/24 11:35	1

Lab Sample ID: LCS 880-74631/2-A

Matrix: Solid

Analysis Batch: 75008

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	262.2		mg/Kg		105	90 - 110

Lab Sample ID: LCSD 880-74631/3-A

Matrix: Solid

Analysis Batch: 75008

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	262.4		mg/Kg		105	90 - 110	0	20

Lab Sample ID: 890-6298-A-44-B MS

Matrix: Solid

Analysis Batch: 75008

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	262		253	512.6		mg/Kg		99	90 - 110

Lab Sample ID: 890-6298-A-44-C MSD

Matrix: Solid

Analysis Batch: 75008

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	262		253	512.7		mg/Kg		99	90 - 110	0	20

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QC Association Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6300-1
SDG: 03C1558256

GC VOA

Prep Batch: 74680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6300-1	SS12	Total/NA	Solid	5035	
MB 880-74680/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-74680/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-74680/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-40172-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-40172-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 74687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-74687/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 74853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6300-1	SS12	Total/NA	Solid	8021B	74680
MB 880-74680/5-A	Method Blank	Total/NA	Solid	8021B	74680
MB 880-74687/5-A	Method Blank	Total/NA	Solid	8021B	74687
LCS 880-74680/1-A	Lab Control Sample	Total/NA	Solid	8021B	74680
LCSD 880-74680/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	74680
880-40172-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	74680
880-40172-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	74680

Analysis Batch: 74993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6300-1	SS12	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 74928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6300-1	SS12	Total/NA	Solid	8015NM Prep	
MB 880-74928/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-74928/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-74928/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-6298-A-30-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-6298-A-30-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 74956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6300-1	SS12	Total/NA	Solid	8015B NM	74928
MB 880-74928/1-A	Method Blank	Total/NA	Solid	8015B NM	74928
LCS 880-74928/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	74928
LCSD 880-74928/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	74928
890-6298-A-30-D MS	Matrix Spike	Total/NA	Solid	8015B NM	74928
890-6298-A-30-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	74928

Analysis Batch: 75097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6300-1	SS12	Total/NA	Solid	8015 NM	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6300-1
SDG: 03C1558256

HPLC/IC

Leach Batch: 74631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6300-1	SS12	Soluble	Solid	DI Leach	
MB 880-74631/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-74631/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-74631/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-6298-A-44-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-6298-A-44-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 75008

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6300-1	SS12	Soluble	Solid	300.0	74631
MB 880-74631/1-A	Method Blank	Soluble	Solid	300.0	74631
LCS 880-74631/2-A	Lab Control Sample	Soluble	Solid	300.0	74631
LCSD 880-74631/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	74631
890-6298-A-44-B MS	Matrix Spike	Soluble	Solid	300.0	74631
890-6298-A-44-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	74631

Lab Chronicle

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6300-1
SDG: 03C1558256

Client Sample ID: SS12
Date Collected: 03/01/24 11:10
Date Received: 03/01/24 13:54

Lab Sample ID: 890-6300-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	74680	03/04/24 15:01	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	74853	03/07/24 09:59	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			74993	03/07/24 09:59	SM	EET MID
Total/NA	Analysis	8015 NM		1			75097	03/07/24 19:07	SM	EET MID
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	74928	03/06/24 16:39	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	74956	03/07/24 19:07	SM	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	74631	03/04/24 12:23	SMC	EET MID
Soluble	Analysis	300.0		1			75008	03/10/24 14:06	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: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6300-1
SDG: 03C1558256

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6300-1
SDG: 03C1558256

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: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6300-1
SDG: 03C1558256

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
890-6300-1	SS12	Solid	03/01/24 11:10	03/01/24 13:54

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Environment Testing
Xenco

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

Chain of Custody

Work Order No: _____

www.xenco.com Page _____ of _____

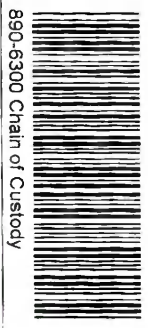
Project Manager:	Ben Bellill	Bill to: (if different)	Amy Ruth
Company Name:	Ensolium	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Amy.Ruth@ExxonMobil.com

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

Project Name:	James Ranch Unit 19 Battery	Turn Around	☒ Routine ☐ Rush	Pres. Code	
Project Number:	03C1558256	Due Date:			
Project Location:		TAT starts the day received by the lab, if received by 4:30pm			
Sampler's Name:	Connor Whitman				
PO #:					
SAMPLE RECEIPT					
Samples Received Intact:	Yes ☒ No ☐	Thermometer ID:	TCM007		
Cooler Custody Seals:	Yes ☐ No ☒ N/A	Correction Factor:	-0.2		
Sample Custody Seals:	Yes ☐ No ☒ N/A	Temperature Reading:	0.2		
Total Containers:		Corrected Temperature:	0.0		

Parameters

CHLORIDES (EPA: 3000.0)	
TPH (8015)	
BTEX (8021)	



890-6300 Chain of Custody

None: NO	DI Water: H ₂ O
Cool: Cool	MeOH: Me
HCL: HC	HNO ₃ : HN
H ₂ SO ₄ : H ₂	NaOH: Na
H ₃ PO ₄ : HP	
NaHSO ₄ : NABIS	
Na ₂ S ₂ O ₃ : NaSO ₃	
Zn Acetate+NaOH: Zn	
NaOH+Ascorbic Acid: SACP	

Sample Comments

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont
512	S	3/1/24	1110	.5	G	1

Incident ID:	nAPP2317142256
Cost Center:	1080931001
AFE:	

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
GAH	adurka	12:54 3/1			

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-6300-1

SDG Number: 03C1558256

Login Number: 6300

List Number: 1

Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	N/A	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: 890-6300-1

SDG Number: 03C1558256

Login Number: 6300

List Source: Eurofins Midland

List Number: 2

List Creation: 03/04/24 12:22 PM

Creator: Kramer, Jessica

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").	N/A	



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 3/11/2024 9:09:54 PM Revision 1

JOB DESCRIPTION

JAMES RANCH UNIT 19 BATTERY
03C1558256

JOB NUMBER

890-6299-1

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



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

Generated
3/11/2024 9:09:54 PM
Revision 1

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Laboratory Job ID: 890-6299-1
SDG: 03C1558256

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Definitions/Glossary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6299-1
SDG: 03C1558256

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
F2	MS/MSD RPD exceeds control limits
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6299-1

Job ID: 890-6299-1

Eurofins Carlsbad

Job Narrative 890-6299-1

REVISION

The report being provided is a revision of the original report sent on 3/11/2024. The report (revision 1) is being revised due to Per client email, requesting chloride re run.

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 3/1/2024 1:54 PM. 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 0.0°C.

Receipt Exceptions

The following sample was received and analyzed from an unpreserved bulk soil jar: SS13 (890-6299-1).

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-74680 and analytical batch 880-74853 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: The surrogate recovery for the blank associated with preparation batch 880-74680 and 880-74687 and analytical batch 880-74853 was outside the control limits.

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

GC Semi VOA

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (890-6298-A-30-C) and (890-6298-A-30-E 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 sample was outside control limits: SS13 (890-6299-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-74928 and analytical batch 880-74956 was outside control limits. Sample non-homogeneity is suspected.

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 - Soluble: The matrix spike (MS) recoveries for preparation batch 880-75201 and analytical batch 880-75291 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.

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6299-1
SDG: 03C1558256

Client Sample ID: SS13

Lab Sample ID: 890-6299-1

Date Collected: 03/01/24 11:20

Matrix: Solid

Date Received: 03/01/24 13:54

Sample Depth: .5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		03/04/24 15:01	03/07/24 09:32	1
Toluene	<0.00201	U	0.00201	mg/Kg		03/04/24 15:01	03/07/24 09:32	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		03/04/24 15:01	03/07/24 09:32	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		03/04/24 15:01	03/07/24 09:32	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		03/04/24 15:01	03/07/24 09:32	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		03/04/24 15:01	03/07/24 09:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	127		70 - 130	03/04/24 15:01	03/07/24 09:32	1
1,4-Difluorobenzene (Surr)	96		70 - 130	03/04/24 15:01	03/07/24 09:32	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			03/07/24 09:32	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	70.8		49.8	mg/Kg			03/07/24 18:45	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		03/06/24 16:39	03/07/24 18:45	1
Diesel Range Organics (Over C10-C28)	70.8		49.8	mg/Kg		03/06/24 16:39	03/07/24 18:45	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		03/06/24 16:39	03/07/24 18:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	150	S1+	70 - 130	03/06/24 16:39	03/07/24 18:45	1
o-Terphenyl	165	S1+	70 - 130	03/06/24 16:39	03/07/24 18:45	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	581		5.01	mg/Kg			03/11/24 16:58	1

Eurofins Carlsbad

Surrogate Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6299-1
SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB1	DFBZ1
		(70-130)	(70-130)
880-40172-A-1-A MS	Matrix Spike	119	100
880-40172-A-1-B MSD	Matrix Spike Duplicate	120	90
890-6299-1	SS13	127	96
LCS 880-74680/1-A	Lab Control Sample	118	111
LCSD 880-74680/2-A	Lab Control Sample Dup	126	113
MB 880-74680/5-A	Method Blank	65 S1-	87
MB 880-74687/5-A	Method Blank	65 S1-	87

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	1CO1	OTPH1
		(70-130)	(70-130)
890-6298-A-30-D MS	Matrix Spike	122	127
890-6298-A-30-E MSD	Matrix Spike Duplicate	147 S1+	151 S1+
890-6299-1	SS13	150 S1+	165 S1+
LCS 880-74928/2-A	Lab Control Sample	92	94
LCSD 880-74928/3-A	Lab Control Sample Dup	91	94
MB 880-74928/1-A	Method Blank	98	111

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6299-1
SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-74680/5-A

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74680

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:01	03/07/24 01:50	1
Toluene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:01	03/07/24 01:50	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:01	03/07/24 01:50	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		03/04/24 15:01	03/07/24 01:50	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:01	03/07/24 01:50	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		03/04/24 15:01	03/07/24 01:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	65	S1-	70 - 130	03/04/24 15:01	03/07/24 01:50	1
1,4-Difluorobenzene (Surr)	87		70 - 130	03/04/24 15:01	03/07/24 01:50	1

Lab Sample ID: LCS 880-74680/1-A

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 74680

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1062		mg/Kg		106	70 - 130
Toluene	0.100	0.1001		mg/Kg		100	70 - 130
Ethylbenzene	0.100	0.1057		mg/Kg		106	70 - 130
m-Xylene & p-Xylene	0.200	0.2127		mg/Kg		106	70 - 130
o-Xylene	0.100	0.1088		mg/Kg		109	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	118		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

Lab Sample ID: LCSD 880-74680/2-A

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 74680

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09101		mg/Kg		91	70 - 130	15	35
Toluene	0.100	0.08726		mg/Kg		87	70 - 130	14	35
Ethylbenzene	0.100	0.09103		mg/Kg		91	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.1832		mg/Kg		92	70 - 130	15	35
o-Xylene	0.100	0.09642		mg/Kg		96	70 - 130	12	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	126		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: 880-40172-A-1-A MS

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 74680

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U F1	0.101	0.06546	F1	mg/Kg		65	70 - 130
Toluene	<0.00199	U F1	0.101	0.06759	F1	mg/Kg		67	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6299-1
SDG: 03C1558256

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

Lab Sample ID: 880-40172-A-1-A MS

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 74680

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.101	0.07282		mg/Kg		72	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.202	0.1430		mg/Kg		71	70 - 130
o-Xylene	<0.00199	U	0.101	0.07651		mg/Kg		76	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	119		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 880-40172-A-1-B MSD

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 74680

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	<0.00199	U F1	0.100	0.06834	F1	mg/Kg		68	70 - 130	4	35
Toluene	<0.00199	U F1	0.100	0.07256		mg/Kg		73	70 - 130	7	35
Ethylbenzene	<0.00199	U	0.100	0.07805		mg/Kg		78	70 - 130	7	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1512		mg/Kg		76	70 - 130	6	35
o-Xylene	<0.00199	U	0.100	0.08226		mg/Kg		82	70 - 130	7	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	120		70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

Lab Sample ID: MB 880-74687/5-A

Matrix: Solid

Analysis Batch: 74853

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74687

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:15	03/06/24 11:51	1
Toluene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:15	03/06/24 11:51	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:15	03/06/24 11:51	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		03/04/24 15:15	03/06/24 11:51	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:15	03/06/24 11:51	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		03/04/24 15:15	03/06/24 11:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	65	S1-	70 - 130	03/04/24 15:15	03/06/24 11:51	1
1,4-Difluorobenzene (Surr)	87		70 - 130	03/04/24 15:15	03/06/24 11:51	1

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

Lab Sample ID: MB 880-74928/1-A

Matrix: Solid

Analysis Batch: 74956

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74928

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		03/06/24 16:39	03/07/24 08:02	1

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6299-1
SDG: 03C1558256

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

Lab Sample ID: MB 880-74928/1-A

Matrix: Solid

Analysis Batch: 74956

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74928

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		03/06/24 16:39	03/07/24 08:02	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		03/06/24 16:39	03/07/24 08:02	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		70 - 130			03/06/24 16:39	03/07/24 08:02	1
o-Terphenyl	111		70 - 130			03/06/24 16:39	03/07/24 08:02	1

Lab Sample ID: LCS 880-74928/2-A

Matrix: Solid

Analysis Batch: 74956

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 74928

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1102		mg/Kg		110	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1074		mg/Kg		107	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	92		70 - 130				
o-Terphenyl	94		70 - 130				

Lab Sample ID: LCSD 880-74928/3-A

Matrix: Solid

Analysis Batch: 74956

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 74928

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1066		mg/Kg		107	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	1000	1058		mg/Kg		106	70 - 130	2	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	91		70 - 130						
o-Terphenyl	94		70 - 130						

Lab Sample ID: 890-6298-A-30-D MS

Matrix: Solid

Analysis Batch: 74956

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 74928

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.7	U F2	1010	903.7		mg/Kg		85	70 - 130
Diesel Range Organics (Over C10-C28)	<49.7	U	1010	889.4		mg/Kg		84	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	122		70 - 130						
o-Terphenyl	127		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6299-1
SDG: 03C1558256

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

Lab Sample ID: 890-6298-A-30-E MSD

Matrix: Solid

Analysis Batch: 74956

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 74928

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.7	U F2	1010	1185	F2	mg/Kg		113	70 - 130	27	20
Diesel Range Organics (Over C10-C28)	<49.7	U	1010	1074		mg/Kg		102	70 - 130	19	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	147	S1+	70 - 130								
o-Terphenyl	151	S1+	70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-74631/1-A

Matrix: Solid

Analysis Batch: 75008

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			03/10/24 11:35	1

Lab Sample ID: LCS 880-74631/2-A

Matrix: Solid

Analysis Batch: 75008

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	262.2		mg/Kg		105	90 - 110

Lab Sample ID: LCSD 880-74631/3-A

Matrix: Solid

Analysis Batch: 75008

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	262.4		mg/Kg		105	90 - 110	0	20

Lab Sample ID: 890-6298-A-44-B MS

Matrix: Solid

Analysis Batch: 75008

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	262		253	512.6		mg/Kg		99	90 - 110

Lab Sample ID: 890-6298-A-44-C MSD

Matrix: Solid

Analysis Batch: 75008

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	262		253	512.7		mg/Kg		99	90 - 110	0	20

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6299-1
SDG: 03C1558256

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 880-75201/1-A

Matrix: Solid

Analysis Batch: 75291

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			03/11/24 14:54	1

Lab Sample ID: LCS 880-75201/2-A

Matrix: Solid

Analysis Batch: 75291

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	239.3		mg/Kg		96	90 - 110

Lab Sample ID: LCSD 880-75201/3-A

Matrix: Solid

Analysis Batch: 75291

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	252.9		mg/Kg		101	90 - 110	6	20

Lab Sample ID: 880-40537-A-1-B MS

Matrix: Solid

Analysis Batch: 75291

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	74.2		250	298.5		mg/Kg		90	90 - 110

Lab Sample ID: 880-40537-A-1-C MSD

Matrix: Solid

Analysis Batch: 75291

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	74.2		250	300.1		mg/Kg		91	90 - 110	1	20

QC Association Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6299-1
SDG: 03C1558256

GC VOA

Prep Batch: 74680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6299-1	SS13	Total/NA	Solid	5035	
MB 880-74680/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-74680/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-74680/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-40172-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-40172-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 74687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-74687/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 74853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6299-1	SS13	Total/NA	Solid	8021B	74680
MB 880-74680/5-A	Method Blank	Total/NA	Solid	8021B	74680
MB 880-74687/5-A	Method Blank	Total/NA	Solid	8021B	74687
LCS 880-74680/1-A	Lab Control Sample	Total/NA	Solid	8021B	74680
LCSD 880-74680/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	74680
880-40172-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	74680
880-40172-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	74680

Analysis Batch: 74992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6299-1	SS13	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 74928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6299-1	SS13	Total/NA	Solid	8015NM Prep	
MB 880-74928/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-74928/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-74928/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-6298-A-30-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-6298-A-30-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 74956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6299-1	SS13	Total/NA	Solid	8015B NM	74928
MB 880-74928/1-A	Method Blank	Total/NA	Solid	8015B NM	74928
LCS 880-74928/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	74928
LCSD 880-74928/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	74928
890-6298-A-30-D MS	Matrix Spike	Total/NA	Solid	8015B NM	74928
890-6298-A-30-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	74928

Analysis Batch: 75096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6299-1	SS13	Total/NA	Solid	8015 NM	

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QC Association Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6299-1
SDG: 03C1558256

HPLC/IC

Leach Batch: 74631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-74631/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-74631/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-74631/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-6298-A-44-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-6298-A-44-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 75008

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-74631/1-A	Method Blank	Soluble	Solid	300.0	74631
LCS 880-74631/2-A	Lab Control Sample	Soluble	Solid	300.0	74631
LCSD 880-74631/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	74631
890-6298-A-44-B MS	Matrix Spike	Soluble	Solid	300.0	74631
890-6298-A-44-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	74631

Leach Batch: 75201

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6299-1	SS13	Soluble	Solid	DI Leach	
MB 880-75201/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-75201/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-75201/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-40537-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-40537-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 75291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6299-1	SS13	Soluble	Solid	300.0	75201
MB 880-75201/1-A	Method Blank	Soluble	Solid	300.0	75201
LCS 880-75201/2-A	Lab Control Sample	Soluble	Solid	300.0	75201
LCSD 880-75201/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	75201
880-40537-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	75201
880-40537-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	75201

Lab Chronicle

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6299-1
SDG: 03C1558256

Client Sample ID: SS13
Date Collected: 03/01/24 11:20
Date Received: 03/01/24 13:54

Lab Sample ID: 890-6299-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	74680	03/04/24 15:01	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	74853	03/07/24 09:32	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			74992	03/07/24 09:32	SM	EET MID
Total/NA	Analysis	8015 NM		1			75096	03/07/24 18:45	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	74928	03/06/24 16:39	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	74956	03/07/24 18:45	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	75201	03/11/24 11:45	SA	EET MID
Soluble	Analysis	300.0		1			75291	03/11/24 16:58	SMC	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: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6299-1
SDG: 03C1558256

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6299-1
SDG: 03C1558256

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: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6299-1
SDG: 03C1558256

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-6299-1	SS13	Solid	03/01/24 11:20	03/01/24 13:54	.5

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14



Chain of Custody

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

Work Order No: _____

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Work Order Comments	
Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐	
State of Project:	
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐	
Deliverables: EDD ☐ ADAPT ☐ Other: _____	

[illegible]

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	CHLOR	TPH (8)	BTEX	Sample Comments
5513	5	11/20 3/11/24	11/20	1.5	G	1	✓	✓	✓	Incident ID: nAPP2317142256
Cost Center: 1080931001 AFE:										

Total	200.7 / 6010	200.8 / 6020:	
8RCRA	13PPM	Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn
TCUP / SPLP 6010:	8RCRA	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	Hg .1631 / .245.1 / .7470 / .7471

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>Chloe</i>	<i>Adrian</i>	B:54 3/1			

Revised Date: 04/27/2020 Rev. 2020

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-6299-1

SDG Number: 03C1558256

Login Number: 6299

List Number: 1

Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	N/A	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: 890-6299-1

SDG Number: 03C1558256

Login Number: 6299

List Number: 2

Creator: Kramer, Jessica

List Source: Eurofins Midland

List Creation: 03/04/24 12:22 PM

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



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 3/14/2024 2:03:04 PM Revision 1

JOB DESCRIPTION

JAMES RANCH UNIT 19 BATTERY
03C1558256

JOB NUMBER

890-6302-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

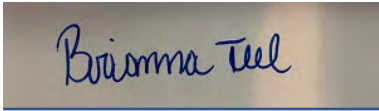
Eurofins Carlsbad

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
3/14/2024 2:03:04 PM
Revision 1

Authorized for release by
Brianna Teel, Project Manager
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Designee for
Jessica Kramer, Project Manager
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Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Laboratory Job ID: 890-6302-1
SDG: 03C1558256

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Definitions/Glossary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6302-1
SDG: 03C1558256

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6302-1

Job ID: 890-6302-1

Eurofins Carlsbad

Job Narrative
890-6302-1

REVISION

The report being provided is a revision of the original report sent on 3/11/2024. The report (revision 1) is being revised due to Per client email, requestin TPH re run.

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 3/1/2024 1:54 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.0°C.

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: BH03 (890-6302-1), BH03A (890-6302-2), BH04 (890-6302-3) and BH04A (890-6302-4).

GC VOA

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-74699 and analytical batch 880-74777 was outside the control limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: BH03A (890-6302-2). 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.

GC Semi VOA

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.

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Client Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6302-1
SDG: 03C1558256

Client Sample ID: BH03

Lab Sample ID: 890-6302-1

Date Collected: 03/01/24 09:35

Matrix: Solid

Date Received: 03/01/24 13:54

Sample Depth: .5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		03/04/24 16:04	03/05/24 23:54	1
Toluene	<0.00201	U	0.00201	mg/Kg		03/04/24 16:04	03/05/24 23:54	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		03/04/24 16:04	03/05/24 23:54	1
m-Xylene & p-Xylene	0.00498		0.00402	mg/Kg		03/04/24 16:04	03/05/24 23:54	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		03/04/24 16:04	03/05/24 23:54	1
Xylenes, Total	0.00498		0.00402	mg/Kg		03/04/24 16:04	03/05/24 23:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		70 - 130	03/04/24 16:04	03/05/24 23:54	1
1,4-Difluorobenzene (Surr)	76		70 - 130	03/04/24 16:04	03/05/24 23:54	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.00498		0.00402	mg/Kg			03/05/24 23:54	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	532		50.1	mg/Kg			03/07/24 01:41	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.1	U *1	50.1	mg/Kg		03/06/24 15:53	03/07/24 01:41	1
Diesel Range Organics (Over C10-C28)	532		50.1	mg/Kg		03/06/24 15:53	03/07/24 01:41	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		03/06/24 15:53	03/07/24 01:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	104		70 - 130	03/06/24 15:53	03/07/24 01:41	1
o-Terphenyl	93		70 - 130	03/06/24 15:53	03/07/24 01:41	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	214		5.05	mg/Kg			03/10/24 14:12	1

Client Sample ID: BH03A

Lab Sample ID: 890-6302-2

Date Collected: 03/01/24 09:40

Matrix: Solid

Date Received: 03/01/24 13:54

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		03/04/24 16:04	03/06/24 00:21	1
Toluene	<0.00199	U	0.00199	mg/Kg		03/04/24 16:04	03/06/24 00:21	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		03/04/24 16:04	03/06/24 00:21	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		03/04/24 16:04	03/06/24 00:21	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		03/04/24 16:04	03/06/24 00:21	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		03/04/24 16:04	03/06/24 00:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	73		70 - 130	03/04/24 16:04	03/06/24 00:21	1

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Client Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6302-1
SDG: 03C1558256

Client Sample ID: BH03A

Lab Sample ID: 890-6302-2

Date Collected: 03/01/24 09:40

Matrix: Solid

Date Received: 03/01/24 13:54

Sample Depth: 1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	67	S1-	70 - 130	03/04/24 16:04	03/06/24 00:21	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg	-		03/06/24 00:21	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	202		50.4	mg/Kg	-		03/07/24 02:02	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.4	U *1	50.4	mg/Kg	-	03/06/24 15:53	03/07/24 02:02	1
Diesel Range Organics (Over C10-C28)	202		50.4	mg/Kg		03/06/24 15:53	03/07/24 02:02	1
Oil Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		03/06/24 15:53	03/07/24 02:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	104		70 - 130			03/06/24 15:53	03/07/24 02:02	1
o-Terphenyl	91		70 - 130			03/06/24 15:53	03/07/24 02:02	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	88.5		5.02	mg/Kg	-		03/10/24 14:17	1

Client Sample ID: BH04

Lab Sample ID: 890-6302-3

Date Collected: 03/01/24 10:10

Matrix: Solid

Date Received: 03/01/24 13:54

Sample Depth: .5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		03/04/24 16:04	03/06/24 00:48	1
Toluene	<0.00199	U	0.00199	mg/Kg		03/04/24 16:04	03/06/24 00:48	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		03/04/24 16:04	03/06/24 00:48	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		03/04/24 16:04	03/06/24 00:48	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		03/04/24 16:04	03/06/24 00:48	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		03/04/24 16:04	03/06/24 00:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130	03/04/24 16:04	03/06/24 00:48	1
1,4-Difluorobenzene (Surr)	91		70 - 130	03/04/24 16:04	03/06/24 00:48	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg	-		03/06/24 00:48	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	165		49.8	mg/Kg	-		03/13/24 15:54	1

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Client Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6302-1
SDG: 03C1558256

Client Sample ID: BH04

Lab Sample ID: 890-6302-3

Date Collected: 03/01/24 10:10

Matrix: Solid

Date Received: 03/01/24 13:54

Sample Depth: .5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		03/12/24 15:19	03/13/24 15:54	1
Diesel Range Organics (Over C10-C28)	165	*1	49.8	mg/Kg		03/12/24 15:19	03/13/24 15:54	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		03/12/24 15:19	03/13/24 15:54	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	101		70 - 130			03/12/24 15:19	03/13/24 15:54	1
o-Terphenyl	80		70 - 130			03/12/24 15:19	03/13/24 15:54	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	57.0		5.04	mg/Kg			03/10/24 14:23	1

Client Sample ID: BH04A

Lab Sample ID: 890-6302-4

Date Collected: 03/01/24 10:15

Matrix: Solid

Date Received: 03/01/24 13:54

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		03/04/24 16:04	03/06/24 01:15	1
Toluene	<0.00198	U	0.00198	mg/Kg		03/04/24 16:04	03/06/24 01:15	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		03/04/24 16:04	03/06/24 01:15	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		03/04/24 16:04	03/06/24 01:15	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		03/04/24 16:04	03/06/24 01:15	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		03/04/24 16:04	03/06/24 01:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	126		70 - 130			03/04/24 16:04	03/06/24 01:15	1
1,4-Difluorobenzene (Surr)	84		70 - 130			03/04/24 16:04	03/06/24 01:15	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			03/06/24 01:15	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	133		50.0	mg/Kg			03/13/24 16:15	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		03/12/24 15:19	03/13/24 16:15	1
Diesel Range Organics (Over C10-C28)	133	*1	50.0	mg/Kg		03/12/24 15:19	03/13/24 16:15	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		03/12/24 15:19	03/13/24 16:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	116		70 - 130			03/12/24 15:19	03/13/24 16:15	1
o-Terphenyl	94		70 - 130			03/12/24 15:19	03/13/24 16:15	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6302-1
SDG: 03C1558256

Client Sample ID: BH04A
Date Collected: 03/01/24 10:15
Date Received: 03/01/24 13:54
Sample Depth: 1

Lab Sample ID: 890-6302-4
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	51.9		4.99	mg/Kg			03/10/24 14:29	1	

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Surrogate Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6302-1
SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB1	DFBZ1
		(70-130)	(70-130)
880-40221-A-1-B MS	Matrix Spike	119	112
880-40221-A-1-C MSD	Matrix Spike Duplicate	121	109
890-6302-1	BH03	89	76
890-6302-2	BH03A	73	67 S1-
890-6302-3	BH04	102	91
890-6302-4	BH04A	126	84
LCS 880-74699/1-A	Lab Control Sample	109	112
LCSD 880-74699/2-A	Lab Control Sample Dup	106	103
MB 880-74699/5-A	Method Blank	62 S1-	88

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	1CO1	OTPH1
		(70-130)	(70-130)
890-6302-1	BH03	104	93
890-6302-2	BH03A	104	91
890-6302-3	BH04	101	80
890-6302-4	BH04A	116	94

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6302-1
SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-74699/5-A

Matrix: Solid

Analysis Batch: 74777

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74699

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		03/04/24 16:04	03/05/24 15:26	1
Toluene	<0.00200	U	0.00200	mg/Kg		03/04/24 16:04	03/05/24 15:26	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		03/04/24 16:04	03/05/24 15:26	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		03/04/24 16:04	03/05/24 15:26	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		03/04/24 16:04	03/05/24 15:26	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		03/04/24 16:04	03/05/24 15:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	62	S1-	70 - 130	03/04/24 16:04	03/05/24 15:26	1
1,4-Difluorobenzene (Surr)	88		70 - 130	03/04/24 16:04	03/05/24 15:26	1

Lab Sample ID: LCS 880-74699/1-A

Matrix: Solid

Analysis Batch: 74777

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 74699

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1084		mg/Kg		108	70 - 130
Toluene	0.100	0.1106		mg/Kg		111	70 - 130
Ethylbenzene	0.100	0.1165		mg/Kg		117	70 - 130
m-Xylene & p-Xylene	0.200	0.2280		mg/Kg		114	70 - 130
o-Xylene	0.100	0.1175		mg/Kg		118	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	112		70 - 130

Lab Sample ID: LCSD 880-74699/2-A

Matrix: Solid

Analysis Batch: 74777

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 74699

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09773		mg/Kg		98	70 - 130	10	35
Toluene	0.100	0.09740		mg/Kg		97	70 - 130	13	35
Ethylbenzene	0.100	0.1084		mg/Kg		108	70 - 130	7	35
m-Xylene & p-Xylene	0.200	0.2142		mg/Kg		107	70 - 130	6	35
o-Xylene	0.100	0.1089		mg/Kg		109	70 - 130	8	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

Lab Sample ID: 880-40221-A-1-B MS

Matrix: Solid

Analysis Batch: 74777

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 74699

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.101	0.1187		mg/Kg		118	70 - 130
Toluene	<0.00199	U	0.101	0.1137		mg/Kg		113	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6302-1
SDG: 03C1558256

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

Lab Sample ID: 880-40221-A-1-B MS

Matrix: Solid

Analysis Batch: 74777

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 74699

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.101	0.1174		mg/Kg		116	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.202	0.2361		mg/Kg		117	70 - 130
o-Xylene	<0.00199	U	0.101	0.1167		mg/Kg		116	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	119		70 - 130
1,4-Difluorobenzene (Surr)	112		70 - 130

Lab Sample ID: 880-40221-A-1-C MSD

Matrix: Solid

Analysis Batch: 74777

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 74699

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	<0.00199	U	0.100	0.1050		mg/Kg		105	70 - 130	12	35
Toluene	<0.00199	U	0.100	0.09899		mg/Kg		99	70 - 130	14	35
Ethylbenzene	<0.00199	U	0.100	0.1010		mg/Kg		101	70 - 130	15	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.2008		mg/Kg		100	70 - 130	16	35
o-Xylene	<0.00199	U	0.100	0.1008		mg/Kg		101	70 - 130	15	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	121		70 - 130
1,4-Difluorobenzene (Surr)	109		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-74631/1-A

Matrix: Solid

Analysis Batch: 75008

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			03/10/24 11:35	1

Lab Sample ID: LCS 880-74631/2-A

Matrix: Solid

Analysis Batch: 75008

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	262.2		mg/Kg		105	90 - 110

Lab Sample ID: LCSD 880-74631/3-A

Matrix: Solid

Analysis Batch: 75008

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Chloride	250	262.4		mg/Kg		105	90 - 110	0	20

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6302-1
SDG: 03C1558256

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-6298-A-44-B MS							Client Sample ID: Matrix Spike				
Matrix: Solid							Prep Type: Soluble				
Analysis Batch: 75008											
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	262		253	512.6		mg/Kg		99	90 - 110		

Lab Sample ID: 890-6298-A-44-C MSD							Client Sample ID: Matrix Spike Duplicate				
Matrix: Solid							Prep Type: Soluble				
Analysis Batch: 75008											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	262		253	512.7		mg/Kg		99	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6302-1
SDG: 03C1558256

GC VOA

Prep Batch: 74699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6302-1	BH03	Total/NA	Solid	5035	
890-6302-2	BH03A	Total/NA	Solid	5035	
890-6302-3	BH04	Total/NA	Solid	5035	
890-6302-4	BH04A	Total/NA	Solid	5035	
MB 880-74699/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-74699/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-74699/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-40221-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
880-40221-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 74777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6302-1	BH03	Total/NA	Solid	8021B	74699
890-6302-2	BH03A	Total/NA	Solid	8021B	74699
890-6302-3	BH04	Total/NA	Solid	8021B	74699
890-6302-4	BH04A	Total/NA	Solid	8021B	74699
MB 880-74699/5-A	Method Blank	Total/NA	Solid	8021B	74699
LCS 880-74699/1-A	Lab Control Sample	Total/NA	Solid	8021B	74699
LCSD 880-74699/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	74699
880-40221-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	74699
880-40221-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	74699

Analysis Batch: 74934

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6302-1	BH03	Total/NA	Solid	Total BTEX	
890-6302-2	BH03A	Total/NA	Solid	Total BTEX	
890-6302-3	BH04	Total/NA	Solid	Total BTEX	
890-6302-4	BH04A	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 74861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6302-1	BH03	Total/NA	Solid	8015B NM	74886
890-6302-2	BH03A	Total/NA	Solid	8015B NM	74886

Prep Batch: 74886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6302-1	BH03	Total/NA	Solid	8015NM Prep	
890-6302-2	BH03A	Total/NA	Solid	8015NM Prep	

Analysis Batch: 75012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6302-1	BH03	Total/NA	Solid	8015 NM	
890-6302-2	BH03A	Total/NA	Solid	8015 NM	
890-6302-3	BH04	Total/NA	Solid	8015 NM	
890-6302-4	BH04A	Total/NA	Solid	8015 NM	

Prep Batch: 75426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6302-3	BH04	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6302-1
SDG: 03C1558256

GC Semi VOA (Continued)

Prep Batch: 75426 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6302-4	BH04A	Total/NA	Solid	8015NM Prep	

Analysis Batch: 75449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6302-3	BH04	Total/NA	Solid	8015B NM	75426
890-6302-4	BH04A	Total/NA	Solid	8015B NM	75426

HPLC/IC

Leach Batch: 74631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6302-1	BH03	Soluble	Solid	DI Leach	
890-6302-2	BH03A	Soluble	Solid	DI Leach	
890-6302-3	BH04	Soluble	Solid	DI Leach	
890-6302-4	BH04A	Soluble	Solid	DI Leach	
MB 880-74631/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-74631/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-74631/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-6298-A-44-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-6298-A-44-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 75008

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6302-1	BH03	Soluble	Solid	300.0	74631
890-6302-2	BH03A	Soluble	Solid	300.0	74631
890-6302-3	BH04	Soluble	Solid	300.0	74631
890-6302-4	BH04A	Soluble	Solid	300.0	74631
MB 880-74631/1-A	Method Blank	Soluble	Solid	300.0	74631
LCS 880-74631/2-A	Lab Control Sample	Soluble	Solid	300.0	74631
LCSD 880-74631/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	74631
890-6298-A-44-B MS	Matrix Spike	Soluble	Solid	300.0	74631
890-6298-A-44-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	74631

Lab Chronicle

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6302-1
SDG: 03C1558256

Client Sample ID: BH03
Date Collected: 03/01/24 09:35
Date Received: 03/01/24 13:54

Lab Sample ID: 890-6302-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	74699	03/04/24 16:04	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	74777	03/05/24 23:54	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			74934	03/05/24 23:54	SM	EET MID
Total/NA	Analysis	8015 NM		1			75012	03/07/24 01:41	SM	EET MID
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	74886	03/06/24 15:53	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	74861	03/07/24 01:41	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	74631	03/04/24 12:23	SMC	EET MID
Soluble	Analysis	300.0		1			75008	03/10/24 14:12	CH	EET MID

Client Sample ID: BH03A
Date Collected: 03/01/24 09:40
Date Received: 03/01/24 13:54

Lab Sample ID: 890-6302-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	74699	03/04/24 16:04	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	74777	03/06/24 00:21	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			74934	03/06/24 00:21	SM	EET MID
Total/NA	Analysis	8015 NM		1			75012	03/07/24 02:02	SM	EET MID
Total/NA	Prep	8015NM Prep			9.92 g	10 mL	74886	03/06/24 15:53	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	74861	03/07/24 02:02	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	74631	03/04/24 12:23	SMC	EET MID
Soluble	Analysis	300.0		1			75008	03/10/24 14:17	CH	EET MID

Client Sample ID: BH04
Date Collected: 03/01/24 10:10
Date Received: 03/01/24 13:54

Lab Sample ID: 890-6302-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	74699	03/04/24 16:04	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	74777	03/06/24 00:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			74934	03/06/24 00:48	SM	EET MID
Total/NA	Analysis	8015 NM		1			75012	03/13/24 15:54	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	75426	03/12/24 15:19	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	75449	03/13/24 15:54	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	74631	03/04/24 12:23	SMC	EET MID
Soluble	Analysis	300.0		1			75008	03/10/24 14:23	CH	EET MID

Client Sample ID: BH04A
Date Collected: 03/01/24 10:15
Date Received: 03/01/24 13:54

Lab Sample ID: 890-6302-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	74699	03/04/24 16:04	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	74777	03/06/24 01:15	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			74934	03/06/24 01:15	SM	EET MID

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Lab Chronicle

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6302-1
SDG: 03C1558256

Client Sample ID: BH04A
Date Collected: 03/01/24 10:15
Date Received: 03/01/24 13:54

Lab Sample ID: 890-6302-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			75012	03/13/24 16:15	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	75426	03/12/24 15:19	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	75449	03/13/24 16:15	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	74631	03/04/24 12:23	SMC	EET MID
Soluble	Analysis	300.0		1			75008	03/10/24 14:29	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
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6302-1
SDG: 03C1558256

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

- 1
- 2
- 3
- 4
- 5
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- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6302-1
SDG: 03C1558256

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: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6302-1
SDG: 03C1558256

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-6302-1	BH03	Solid	03/01/24 09:35	03/01/24 13:54	.5
890-6302-2	BH03A	Solid	03/01/24 09:40	03/01/24 13:54	1
890-6302-3	BH04	Solid	03/01/24 10:10	03/01/24 13:54	.5
890-6302-4	BH04A	Solid	03/01/24 10:15	03/01/24 13:54	1

- 1
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- 7
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- 9
- 10
- 11
- 12
- 13
- 14



Chain of Custody

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

Work Order No:

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Project Manager:	Ben Beilil	Bill to: (if different)	Amy Ruth
Company Name:	Ensolum	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Amy.Ruth@ExxonMobil.com

Work Order Comments	
Program: USTPST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐	
State of Project:	
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐	
Deliverables: EDD ☐ ADAPT ☐ Other:	

Project Name:				James Ranch Unit 19 Battery				Turn Around							
Project Number:				03C1558256				☒ Routine ☐ Rush				Pres. Code			
Project Location:								Due Date:							
Sampler's Name:				Connor Whitman				TAT starts the day received by the lab, if received by 4:30pm							
PO #:															
SAMPLE RECEIPT				Temp Blank:				(Yes) No				Wet Ice:			
Samples Received Intact:				(Yes) No				Thermometer ID:				Tpm007			
Cooler Custody Seals:				Yes No				Correction Factor:				-0.2			
Sample Custody Seals:				Yes No				Temperature Reading:				0.2			
Total Containers:								Corrected Temperature:				0.0			
Parameters															
RIDES (EPA: 3000.0)															
015) 8021)															
ANALYSIS REQUEST															
 890-6302 Chain of Custody															
None: NO				DI Water: H ₂ O											
Cool				MeOH: Me											
HC				HNO ₃ : HN											
H ₂				NaOH: Na											
4: HP															
: O ₃ : NABIS															
: O ₃ : NaSO ₃															
Zn Acetate+NaOH: Zn															
NaOH+Ascorbic Acid: SAPC															
Preservative Codes															

[illegible]

Total	200.7 / 6010	200.8 / 6020:	
8RCRA	13PPM	Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed			
TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U			Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xeno, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xeno 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 Xeno. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xeno, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>Chatt</i>	<i>Calderin</i>	12:54 3/12			

Revised Date: 08/25/2020 Rev. 2020

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-6302-1

SDG Number: 03C1558256

Login Number: 6302

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	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: 890-6302-1

SDG Number: 03C1558256

Login Number: 6302

List Number: 2

Creator: Kramer, Jessica

List Source: Eurofins Midland

List Creation: 03/04/24 12:22 PM

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



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 3/11/2024 4:29:27 PM

JOB DESCRIPTION

JAMES RANCH UNIT 19 BATTERY

03C1558256

JOB NUMBER

890-6303-1

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



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3/11/2024 4:29:27 PM

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

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Laboratory Job ID: 890-6303-1
SDG: 03C1558256

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Definitions/Glossary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

Qualifiers

GC VOA

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

GC Semi VOA

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

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

Case Narrative

Client: Ensolum
Project: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1

Job ID: 890-6303-1

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Job Narrative
890-6303-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 3/1/2024 1:54 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.0°C.

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: BH03B (890-6303-1) and BH04B (890-6303-2).

GC VOA

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-74750 recovered above the upper control limit for Benzene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: (CCV 880-74750/2), (CCV 880-74750/20) and (CCV 880-74750/64).

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-74689 and analytical batch 880-74750 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: The surrogate recovery for the blank associated with preparation batch 880-74699 and analytical batch 880-74777 was outside the control limits.

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-74750 recovered above the upper control limit for Benzene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: (CCV 880-74750/33) and (CCV 880-74750/51).

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

GC Semi VOA

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-74886 and analytical batch 880-74861 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10.

Method 8015MOD_NM: The matrix spike duplicate (MSD) recoveries for preparation batch 880-74886 and analytical batch 880-74861 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8015MOD_NM: The continuing calibration verification (CCV) associated with batch 880-74861 recovered below the lower control limit for Gasoline Range Organics (GRO)-C6-C10. An acceptable CCV was ran within the 12 hour window, therefore the data has been qualified and reported. The associated sample is impacted: (CCV 880-74861/58).

Method 8015MOD_NM: The continuing calibration verification (CCV) associated with batch 880-75049 recovered above the upper control limit for Diesel Range Organics (Over C10-C28). An acceptable CCV was ran within the 12 hour limit, therefore the data has been qualified and reported. The associated sample is impacted: (CCV 880-75049/5).

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-75057 and analytical batch

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Case Narrative

Client: Ensolum
Project: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1

Job ID: 890-6303-1 (Continued) **Eurofins Carlsbad**

880-75049 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 - Soluble: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-74624 and analytical batch 880-74819 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.

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Client Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

Client Sample ID: BH03B

Lab Sample ID: 890-6303-1

Date Collected: 03/01/24 09:55

Matrix: Solid

Date Received: 03/01/24 13:54

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		03/04/24 16:04	03/06/24 01:42	1
Toluene	<0.00200	U	0.00200	mg/Kg		03/04/24 16:04	03/06/24 01:42	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		03/04/24 16:04	03/06/24 01:42	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		03/04/24 16:04	03/06/24 01:42	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		03/04/24 16:04	03/06/24 01:42	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		03/04/24 16:04	03/06/24 01:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	122		70 - 130	03/04/24 16:04	03/06/24 01:42	1
1,4-Difluorobenzene (Surr)	99		70 - 130	03/04/24 16:04	03/06/24 01:42	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			03/06/24 01:42	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			03/07/24 04:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *1	50.0	mg/Kg		03/06/24 15:53	03/07/24 04:29	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		03/06/24 15:53	03/07/24 04:29	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		03/06/24 15:53	03/07/24 04:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	106		70 - 130	03/06/24 15:53	03/07/24 04:29	1
o-Terphenyl	90		70 - 130	03/06/24 15:53	03/07/24 04:29	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	789		49.8	mg/Kg			03/08/24 00:51	10

Client Sample ID: BH04B

Lab Sample ID: 890-6303-2

Date Collected: 03/01/24 10:30

Matrix: Solid

Date Received: 03/01/24 13:54

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U *+	0.00201	mg/Kg		03/04/24 15:22	03/06/24 03:14	1
Toluene	<0.00201	U	0.00201	mg/Kg		03/04/24 15:22	03/06/24 03:14	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		03/04/24 15:22	03/06/24 03:14	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		03/04/24 15:22	03/06/24 03:14	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		03/04/24 15:22	03/06/24 03:14	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		03/04/24 15:22	03/06/24 03:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130	03/04/24 15:22	03/06/24 03:14	1

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Client Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

Client Sample ID: BH04B

Lab Sample ID: 890-6303-2

Date Collected: 03/01/24 10:30

Matrix: Solid

Date Received: 03/01/24 13:54

Sample Depth: 4

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	105		70 - 130	03/04/24 15:22	03/06/24 03:14	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			03/06/24 03:14	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	407		50.0	mg/Kg			03/08/24 18:00	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		03/08/24 10:24	03/08/24 18:00	1
Diesel Range Organics (Over C10-C28)	407		50.0	mg/Kg		03/08/24 10:24	03/08/24 18:00	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		03/08/24 10:24	03/08/24 18:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	107		70 - 130			03/08/24 10:24	03/08/24 18:00	1
o-Terphenyl	96		70 - 130			03/08/24 10:24	03/08/24 18:00	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	84.2		4.96	mg/Kg			03/08/24 00:55	1

Surrogate Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-40191-A-1-C MS	Matrix Spike	94	100
880-40191-A-1-D MSD	Matrix Spike Duplicate	101	101
880-40221-A-1-B MS	Matrix Spike	119	112
880-40221-A-1-C MSD	Matrix Spike Duplicate	121	109
890-6303-1	BH03B	122	99
890-6303-2	BH04B	96	105
LCS 880-74689/1-A	Lab Control Sample	94	104
LCS 880-74699/1-A	Lab Control Sample	109	112
LCSD 880-74689/2-A	Lab Control Sample Dup	105	99
LCSD 880-74699/2-A	Lab Control Sample Dup	106	103
MB 880-74652/5-A	Method Blank	77	98
MB 880-74689/5-A	Method Blank	78	98
MB 880-74699/5-A	Method Blank	62 S1-	88
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-40358-A-1-B MS	Matrix Spike	105	84
880-40358-A-1-C MSD	Matrix Spike Duplicate	125	98
890-6303-1	BH03B	106	90
890-6303-2	BH04B	107	96
890-6320-A-21-H MS	Matrix Spike	107	87
890-6320-A-21-I MSD	Matrix Spike Duplicate	123	98
LCS 880-74886/2-A	Lab Control Sample	81	72
LCS 880-75057/2-A	Lab Control Sample	107	120
LCSD 880-74886/3-A	Lab Control Sample Dup	93	79
LCSD 880-75057/3-A	Lab Control Sample Dup	104	109
MB 880-74886/1-A	Method Blank	98	89
MB 880-75057/1-A	Method Blank	133 S1+	126
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum

Job ID: 890-6303-1

Project/Site: JAMES RANCH UNIT 19 BATTERY

SDG: 03C1558256

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-74652/5-A

Matrix: Solid

Analysis Batch: 74750

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74652

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		03/04/24 13:22	03/05/24 11:33	1
Toluene	<0.00200	U	0.00200	mg/Kg		03/04/24 13:22	03/05/24 11:33	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		03/04/24 13:22	03/05/24 11:33	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		03/04/24 13:22	03/05/24 11:33	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		03/04/24 13:22	03/05/24 11:33	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		03/04/24 13:22	03/05/24 11:33	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	77		70 - 130	03/04/24 13:22	03/05/24 11:33	1
1,4-Difluorobenzene (Surr)	98		70 - 130	03/04/24 13:22	03/05/24 11:33	1

Lab Sample ID: MB 880-74689/5-A

Matrix: Solid

Analysis Batch: 74750

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74689

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:22	03/05/24 22:18	1
Toluene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:22	03/05/24 22:18	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:22	03/05/24 22:18	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		03/04/24 15:22	03/05/24 22:18	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		03/04/24 15:22	03/05/24 22:18	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		03/04/24 15:22	03/05/24 22:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		70 - 130	03/04/24 15:22	03/05/24 22:18	1
1,4-Difluorobenzene (Surr)	98		70 - 130	03/04/24 15:22	03/05/24 22:18	1

Lab Sample ID: LCS 880-74689/1-A

Matrix: Solid

Analysis Batch: 74750

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 74689

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1404	*+	mg/Kg		140	70 - 130
Toluene	0.100	0.1078		mg/Kg		108	70 - 130
Ethylbenzene	0.100	0.1083		mg/Kg		108	70 - 130
m-Xylene & p-Xylene	0.200	0.2137		mg/Kg		107	70 - 130
o-Xylene	0.100	0.1036		mg/Kg		104	70 - 130

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

Lab Sample ID: LCSD 880-74689/2-A

Matrix: Solid

Analysis Batch: 74750

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 74689

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1235		mg/Kg		123	70 - 130	13	35

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

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

Lab Sample ID: LCSD 880-74689/2-A

Matrix: Solid

Analysis Batch: 74750

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 74689

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Toluene	0.100	0.1105		mg/Kg		111	70 - 130	2		35
Ethylbenzene	0.100	0.1170		mg/Kg		117	70 - 130	8		35
m-Xylene & p-Xylene	0.200	0.2376		mg/Kg		119	70 - 130	11		35
o-Xylene	0.100	0.1159		mg/Kg		116	70 - 130	11		35

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

Lab Sample ID: 880-40191-A-1-C MS

Matrix: Solid

Analysis Batch: 74750

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 74689

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	RPD
Benzene	<0.00199	U *	0.101	0.07447		mg/Kg		74	70 - 130	
Toluene	<0.00199	U F1	0.101	0.05837	F1	mg/Kg		58	70 - 130	
Ethylbenzene	<0.00199	U F1	0.101	0.06249	F1	mg/Kg		62	70 - 130	
m-Xylene & p-Xylene	<0.00398	U F1	0.202	0.1174	F1	mg/Kg		58	70 - 130	
o-Xylene	<0.00199	U F1	0.101	0.06176	F1	mg/Kg		61	70 - 130	

Surrogate	MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	94		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 880-40191-A-1-D MSD

Matrix: Solid

Analysis Batch: 74750

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 74689

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits	RPD		
Benzene	<0.00199	U *	0.100	0.08270		mg/Kg		83	70 - 130	10		35
Toluene	<0.00199	U F1	0.100	0.06391	F1	mg/Kg		64	70 - 130	9		35
Ethylbenzene	<0.00199	U F1	0.100	0.06490	F1	mg/Kg		65	70 - 130	4		35
m-Xylene & p-Xylene	<0.00398	U F1	0.200	0.1212	F1	mg/Kg		61	70 - 130	3		35
o-Xylene	<0.00199	U F1	0.100	0.06397	F1	mg/Kg		64	70 - 130	4		35

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

Lab Sample ID: MB 880-74699/5-A

Matrix: Solid

Analysis Batch: 74777

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74699

Analyte	MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		03/04/24 16:04	03/05/24 15:26	1
Toluene	<0.00200	U	0.00200	mg/Kg		03/04/24 16:04	03/05/24 15:26	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		03/04/24 16:04	03/05/24 15:26	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		03/04/24 16:04	03/05/24 15:26	1

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

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

Lab Sample ID: MB 880-74699/5-A

Matrix: Solid

Analysis Batch: 74777

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74699

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
o-Xylene	<0.00200	U	0.00200	mg/Kg		03/04/24 16:04	03/05/24 15:26	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		03/04/24 16:04	03/05/24 15:26	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	62	S1-	70 - 130	03/04/24 16:04	03/05/24 15:26	1
1,4-Difluorobenzene (Surr)	88		70 - 130	03/04/24 16:04	03/05/24 15:26	1

Lab Sample ID: LCS 880-74699/1-A

Matrix: Solid

Analysis Batch: 74777

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 74699

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	0.100	0.1084		mg/Kg		108	70 - 130
Toluene	0.100	0.1106		mg/Kg		111	70 - 130
Ethylbenzene	0.100	0.1165		mg/Kg		117	70 - 130
m-Xylene & p-Xylene	0.200	0.2280		mg/Kg		114	70 - 130
o-Xylene	0.100	0.1175		mg/Kg		118	70 - 130

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	112		70 - 130

Lab Sample ID: LCSD 880-74699/2-A

Matrix: Solid

Analysis Batch: 74777

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 74699

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
		Result	Qualifier						
Benzene	0.100	0.09773		mg/Kg		98	70 - 130	10	35
Toluene	0.100	0.09740		mg/Kg		97	70 - 130	13	35
Ethylbenzene	0.100	0.1084		mg/Kg		108	70 - 130	7	35
m-Xylene & p-Xylene	0.200	0.2142		mg/Kg		107	70 - 130	6	35
o-Xylene	0.100	0.1089		mg/Kg		109	70 - 130	8	35

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

Lab Sample ID: 880-40221-A-1-B MS

Matrix: Solid

Analysis Batch: 74777

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 74699

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Benzene	<0.00199	U	0.101	0.1187		mg/Kg		118	70 - 130
Toluene	<0.00199	U	0.101	0.1137		mg/Kg		113	70 - 130
Ethylbenzene	<0.00199	U	0.101	0.1174		mg/Kg		116	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.202	0.2361		mg/Kg		117	70 - 130
o-Xylene	<0.00199	U	0.101	0.1167		mg/Kg		116	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

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

Lab Sample ID: 880-40221-A-1-B MS

Matrix: Solid

Analysis Batch: 74777

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 74699

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	119		70 - 130
1,4-Difluorobenzene (Surr)	112		70 - 130

Lab Sample ID: 880-40221-A-1-C MSD

Matrix: Solid

Analysis Batch: 74777

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 74699

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.100	0.1050		mg/Kg		105	70 - 130	12	35
Toluene	<0.00199	U	0.100	0.09899		mg/Kg		99	70 - 130	14	35
Ethylbenzene	<0.00199	U	0.100	0.1010		mg/Kg		101	70 - 130	15	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.2008		mg/Kg		100	70 - 130	16	35
o-Xylene	<0.00199	U	0.100	0.1008		mg/Kg		101	70 - 130	15	35

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	121		70 - 130
1,4-Difluorobenzene (Surr)	109		70 - 130

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

Lab Sample ID: MB 880-74886/1-A

Matrix: Solid

Analysis Batch: 74861

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 74886

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		03/06/24 12:10	03/06/24 19:35	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		03/06/24 12:10	03/06/24 19:35	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		03/06/24 12:10	03/06/24 19:35	1

	MB	MB						
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
1-Chlorooctane	98		70 - 130	03/06/24 12:10	03/06/24 19:35	1		
o-Terphenyl	89		70 - 130	03/06/24 12:10	03/06/24 19:35	1		

Lab Sample ID: LCS 880-74886/2-A

Matrix: Solid

Analysis Batch: 74861

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 74886

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	1000	1178		mg/Kg		118	70 - 130		
Diesel Range Organics (Over C10-C28)	1000	1021		mg/Kg		102	70 - 130		

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	81		70 - 130
o-Terphenyl	72		70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

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

Lab Sample ID: LCSD 880-74886/3-A

Matrix: Solid

Analysis Batch: 74861

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 74886

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	819.9	*1	mg/Kg		82	70 - 130	36	20
Diesel Range Organics (Over C10-C28)	1000	1142		mg/Kg		114	70 - 130	11	20
		LCSD	LCSD						
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	93		70 - 130						
o-Terphenyl	79		70 - 130						

Lab Sample ID: 880-40358-A-1-B MS

Matrix: Solid

Analysis Batch: 74861

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 74886

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.4	U *1 F1	1010	1251		mg/Kg		120	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.4	U	1010	984.5		mg/Kg		94	70 - 130		
		MS	MS								
Surrogate	%Recovery	Qualifier	Limits								
1-Chlorooctane	105		70 - 130								
o-Terphenyl	84		70 - 130								

Lab Sample ID: 880-40358-A-1-C MSD

Matrix: Solid

Analysis Batch: 74861

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 74886

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.4	U *1 F1	1010	1371	F1	mg/Kg		132	70 - 130	9	20
Diesel Range Organics (Over C10-C28)	<50.4	U	1010	1160		mg/Kg		111	70 - 130	16	20
		MSD	MSD								
Surrogate	%Recovery	Qualifier	Limits								
1-Chlorooctane	125		70 - 130								
o-Terphenyl	98		70 - 130								

Lab Sample ID: MB 880-75057/1-A

Matrix: Solid

Analysis Batch: 75049

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 75057

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		03/08/24 07:24	03/08/24 07:53	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		03/08/24 07:24	03/08/24 07:53	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		03/08/24 07:24	03/08/24 07:53	1

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

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

Lab Sample ID: MB 880-75057/1-A
Matrix: Solid
Analysis Batch: 75049

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 75057

	MB	MB								
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil	Fac			
1-Chlorooctane	133	S1+	70 - 130	03/08/24 07:24	03/08/24 07:53	1				
o-Terphenyl	126		70 - 130	03/08/24 07:24	03/08/24 07:53	1				

Lab Sample ID: LCS 880-75057/2-A
Matrix: Solid
Analysis Batch: 75049

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 75057

			Spike	LCS	LCS				%Rec		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1079		mg/Kg		108	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	972.3		mg/Kg		97	70 - 130		
Surrogate		LCS	LCS								
	%Recovery	Qualifier	Limits								
1-Chlorooctane	107		70 - 130								
o-Terphenyl	120		70 - 130								

Lab Sample ID: LCSD 880-75057/3-A
Matrix: Solid
Analysis Batch: 75049

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 75057

			Spike	LCSD	LCSD				%Rec			RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit		
Gasoline Range Organics (GRO)-C6-C10			1000	1029		mg/Kg		103	70 - 130	5	20		
Diesel Range Organics (Over C10-C28)			1000	926.7		mg/Kg		93	70 - 130	5	20		
Surrogate		LCSD	LCSD										
	%Recovery	Qualifier	Limits										
1-Chlorooctane	104		70 - 130										
o-Terphenyl	109		70 - 130										

Lab Sample ID: 890-6320-A-21-H MS
Matrix: Solid
Analysis Batch: 75049

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 75057

	Sample	Sample	Spike	MS	MS				%Rec				
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits				
Gasoline Range Organics (GRO)-C6-C10	<50.1	U	1010	991.5		mg/Kg		98	70 - 130				
Diesel Range Organics (Over C10-C28)	85.1		1010	1080		mg/Kg		99	70 - 130				
Surrogate		MS	MS										
	%Recovery	Qualifier	Limits										
1-Chlorooctane	107		70 - 130										
o-Terphenyl	87		70 - 130										

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

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

Lab Sample ID: 890-6320-A-21-I MSD

Matrix: Solid

Analysis Batch: 75049

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 75057

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.1	U	1010	1096		mg/Kg		109	70 - 130	10	20
Diesel Range Organics (Over C10-C28)	85.1		1010	1268		mg/Kg		117	70 - 130	16	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	123		70 - 130								
o-Terphenyl	98		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-74624/1-A

Matrix: Solid

Analysis Batch: 74819

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			03/07/24 22:46	1

Lab Sample ID: LCS 880-74624/2-A

Matrix: Solid

Analysis Batch: 74819

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	250.0		mg/Kg		100	90 - 110

Lab Sample ID: LCSD 880-74624/3-A

Matrix: Solid

Analysis Batch: 74819

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	255.6		mg/Kg		102	90 - 110	2	20

Lab Sample ID: 880-40194-A-28-B MS

Matrix: Solid

Analysis Batch: 74819

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	1630	F1	2510	4979	F1	mg/Kg		134	90 - 110

Lab Sample ID: 880-40194-A-28-C MSD

Matrix: Solid

Analysis Batch: 74819

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1630	F1	2510	4981	F1	mg/Kg		134	90 - 110	0	20

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QC Sample Results

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-40194-A-38-B MS								Client Sample ID: Matrix Spike				
Matrix: Solid								Prep Type: Soluble				
Analysis Batch: 74819												
	Sample	Sample	Spike	MS	MS				%Rec			
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits			
Chloride	4410	F1	4950	10060	F1	mg/Kg		114	90 - 110			

Lab Sample ID: 880-40194-A-38-C MSD								Client Sample ID: Matrix Spike Duplicate				
Matrix: Solid								Prep Type: Soluble				
Analysis Batch: 74819												
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	4410	F1	4950	9973	F1	mg/Kg		112	90 - 110	1	20	

QC Association Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

GC VOA

Prep Batch: 74652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-74652/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 74689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6303-2	BH04B	Total/NA	Solid	5035	
MB 880-74689/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-74689/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-74689/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-40191-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
880-40191-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 74699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6303-1	BH03B	Total/NA	Solid	5035	
MB 880-74699/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-74699/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-74699/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-40221-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
880-40221-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 74750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6303-2	BH04B	Total/NA	Solid	8021B	74689
MB 880-74652/5-A	Method Blank	Total/NA	Solid	8021B	74652
MB 880-74689/5-A	Method Blank	Total/NA	Solid	8021B	74689
LCS 880-74689/1-A	Lab Control Sample	Total/NA	Solid	8021B	74689
LCSD 880-74689/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	74689
880-40191-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	74689
880-40191-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	74689

Analysis Batch: 74777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6303-1	BH03B	Total/NA	Solid	8021B	74699
MB 880-74699/5-A	Method Blank	Total/NA	Solid	8021B	74699
LCS 880-74699/1-A	Lab Control Sample	Total/NA	Solid	8021B	74699
LCSD 880-74699/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	74699
880-40221-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	74699
880-40221-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	74699

Analysis Batch: 74918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6303-1	BH03B	Total/NA	Solid	Total BTEX	
890-6303-2	BH04B	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 74861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6303-1	BH03B	Total/NA	Solid	8015B NM	74886
MB 880-74886/1-A	Method Blank	Total/NA	Solid	8015B NM	74886
LCS 880-74886/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	74886

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

GC Semi VOA (Continued)

Analysis Batch: 74861 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-74886/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	74886
880-40358-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	74886
880-40358-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	74886

Prep Batch: 74886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6303-1	BH03B	Total/NA	Solid	8015NM Prep	
MB 880-74886/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-74886/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-74886/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-40358-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-40358-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 75014

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6303-1	BH03B	Total/NA	Solid	8015 NM	
890-6303-2	BH04B	Total/NA	Solid	8015 NM	

Analysis Batch: 75049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6303-2	BH04B	Total/NA	Solid	8015B NM	75057
MB 880-75057/1-A	Method Blank	Total/NA	Solid	8015B NM	75057
LCS 880-75057/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	75057
LCSD 880-75057/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	75057
890-6320-A-21-H MS	Matrix Spike	Total/NA	Solid	8015B NM	75057
890-6320-A-21-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	75057

Prep Batch: 75057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6303-2	BH04B	Total/NA	Solid	8015NM Prep	
MB 880-75057/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-75057/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-75057/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-6320-A-21-H MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-6320-A-21-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

HPLC/IC

Leach Batch: 74624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6303-1	BH03B	Soluble	Solid	DI Leach	
890-6303-2	BH04B	Soluble	Solid	DI Leach	
MB 880-74624/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-74624/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-74624/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-40194-A-28-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-40194-A-28-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
880-40194-A-38-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-40194-A-38-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

HPLC/IC

Analysis Batch: 74819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6303-1	BH03B	Soluble	Solid	300.0	74624
890-6303-2	BH04B	Soluble	Solid	300.0	74624
MB 880-74624/1-A	Method Blank	Soluble	Solid	300.0	74624
LCS 880-74624/2-A	Lab Control Sample	Soluble	Solid	300.0	74624
LCSD 880-74624/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	74624
880-40194-A-28-B MS	Matrix Spike	Soluble	Solid	300.0	74624
880-40194-A-28-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	74624
880-40194-A-38-B MS	Matrix Spike	Soluble	Solid	300.0	74624
880-40194-A-38-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	74624

Lab Chronicle

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

Client Sample ID: BH03B
Date Collected: 03/01/24 09:55
Date Received: 03/01/24 13:54

Lab Sample ID: 890-6303-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	74699	03/04/24 16:04	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	74777	03/06/24 01:42	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			74918	03/06/24 01:42	SM	EET MID
Total/NA	Analysis	8015 NM		1			75014	03/07/24 04:29	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	74886	03/06/24 15:53	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	74861	03/07/24 04:29	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	74624	03/04/24 11:56	SMC	EET MID
Soluble	Analysis	300.0		10			74819	03/08/24 00:51	CH	EET MID

Client Sample ID: BH04B
Date Collected: 03/01/24 10:30
Date Received: 03/01/24 13:54

Lab Sample ID: 890-6303-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	74689	03/04/24 15:22	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	74750	03/06/24 03:14	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			74918	03/06/24 03:14	SM	EET MID
Total/NA	Analysis	8015 NM		1			75014	03/08/24 18:00	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	75057	03/08/24 10:24	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	75049	03/08/24 18:00	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	74624	03/04/24 11:56	SMC	EET MID
Soluble	Analysis	300.0		1			74819	03/08/24 00:55	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: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum
Project/Site: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

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: JAMES RANCH UNIT 19 BATTERY

Job ID: 890-6303-1
SDG: 03C1558256

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-6303-1	BH03B	Solid	03/01/24 09:55	03/01/24 13:54	4
890-6303-2	BH04B	Solid	03/01/24 10:30	03/01/24 13:54	4

- 1
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- 14



Environment Testing
Xenco

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

Chain of Custody

Work Order No: _____

www.xenco.com Page _____ of _____

Project Manager:	Ben Bell	Bill to: (if different)	Amy Ruth
Company Name:	Ensolum	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Amy.Ruth@ExxonMobil.com

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

Project Name:	James Ranch Unit 19 Battery	Turn Around	☒ Routine ☐ Rush	Pres. Code	
Project Number:	03C1558256	Due Date:			
Project Location:	Connor Whitman	TAT starts the day received by the lab, if received by 4:30pm			
Sampler's Name:					
PO #:					
SAMPLE RECEIPT	Temp Blank: ☒ Yes ☒ No	Wet Ice: ☒ Yes ☒ No	Parameters		
Samples Received Intact:	☒ Yes ☒ No	Thermometer ID:	TMC07		
Cooler Custody Seals:	☒ Yes ☒ No	Correction Factor:	-0.2		
Sample Custody Seals:	☒ Yes ☒ No	Temperature Reading:	0.2		
Total Containers:		Corrected Temperature:	C.O.		



890-6303 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	CHLORIDES (EPA: 3000.0)	TPH (8015)	BTEX (8021)	ANALYSIS REQUEST	Preservative Codes	Sample Comments
BH03B	S	3/1/24	955	4	G	1	/	/	/		None: NO Cool: Cool HCL: HC H ₂ SO ₄ : H ₂ H ₃ PO ₄ : HP NaHSO ₄ : NABIS Na ₂ S ₂ O ₃ : NaSO ₃ Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: SAPC	Incident ID: nAPP2317142256
MT04B	S	↓	1030	4	G	1	/	/	/			Cost Center: 1080931001
CV												

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 163+1245-17470-17471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$3 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
CHA	albm	13:51 3/1/24			
3		4			
5		6			

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-6303-1

SDG Number: 03C1558256

Login Number: 6303

List Number: 1

Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	N/A	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: 890-6303-1

SDG Number: 03C1558256

Login Number: 6303

List Source: Eurofins Midland

List Number: 2

List Creation: 03/04/24 12:22 PM

Creator: Kramer, Jessica

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").	N/A	

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
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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 502636

QUESTIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 502636
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2317142256
Incident Name	NAPP2317142256 JAMES RANCH UNIT 19 TANK BATTERY @ J-36-22S-30E
Incident Type	Produced Water Release
Incident Status	Remediation Closure Report Received

Location of Release Source

Please answer all the questions in this group.

Site Name	JAMES RANCH UNIT 19 TANK BATTERY
Date Release Discovered	06/12/2023
Surface Owner	State

Incident Details

Please answer all the questions in this group.

Incident Type	Produced Water 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	Not answered.
Produced Water Released (bbls) Details	Cause: Corrosion Flow Line - Production Produced Water Released: 10 BBL Recovered: 10 BBL Lost: 0 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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QUESTIONS, Page 2

Action 502636

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 502636
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

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	No
Reasons why this would be considered a submission for a notification of a major release	Unavailable.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response

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

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

I hereby agree and sign off to the above statement	Name: Robert Woodall Title: Environmental Analyst Email: robert.d.woodall@exxonmobil.com Date: 09/04/2025
--	---

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Santa Fe, NM 87505

QUESTIONS, Page 3

Action 502636

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 502636
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Site Characterization	
<i>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.</i>	
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 1 and 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 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 ½ and 1 (mi.)
Any other fresh water well or spring	Between ½ and 1 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Between 1 and 5 (mi.)
An (non-karst) unstable area	Between ½ and 1 (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	
<i>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.</i>	
Requesting a remediation plan approval with this submission	Yes
<i>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.</i>	
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)	17500
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	532
GRO+DRO (EPA SW-846 Method 8015M)	532
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0
<i>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>	
On what estimated date will the remediation commence	07/07/2023
On what date will (or did) the final sampling or liner inspection occur	03/01/2024
On what date will (or was) the remediation complete(d)	03/01/2024
What is the estimated surface area (in square feet) that will be reclaimed	1207
What is the estimated volume (in cubic yards) that will be reclaimed	179
What is the estimated surface area (in square feet) that will be remediated	161
What is the estimated volume (in cubic yards) that will be remediated	10
<i>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.</i>	
<i>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.</i>	

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QUESTIONS, Page 4

Action 502636

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 502636
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Remediation Plan (continued)	
<i>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.</i>	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
<i>(Select all answers below that apply.)</i>	
(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	fEEM0112334510 HALFWAY DISPOSAL AND LANDFILL
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.
<i>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>	
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: Robert Woodall Title: Environmental Analyst Email: robert.d.woodall@exxonmobil.com Date: 09/04/2025
<i>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.</i>	

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Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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 502636

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 502636
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS, Page 6

Action 502636

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 502636
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	316733
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	03/01/2024
What was the (estimated) number of samples that were to be gathered	16
What was the sampling surface area in square feet	3200

Remediation Closure Request

Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.

Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	161
What was the total volume (cubic yards) remediated	10
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	0
What was the total volume (in cubic yards) reclaimed	0
Summarize any additional remediation activities not included by answers (above)	Additional soil sampling activities were conducted at the Site to address the June 12, 2023, produced water release. Laboratory analytical results from all samples collected from the final release extent and release area, indicated that all COC concentrations were in compliance with the Closure Criteria. Based on laboratory analytical results, impacted soil exceeding the Site Closure Criteria has been excavated and no further remediation is required at this time. However, soil on the facility pad exceeding the reclamation requirements of NMAC 19.15.29.13.D (1) will be removed during the final reclamation of the facility pad. The excavation was backfilled with material purchased locally and the surface recontoured to match pre-existing Site conditions. Excavation of impacted soil has mitigated impacts at this Site. Depth to groundwater is confirmed to be greater than 100 feet bgs and no other sensitive receptors were identified near the release extent. XTO believes these remedial actions are protective of human health, the environment, and groundwater.

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

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

I hereby agree and sign off to the above statement	Name: Robert Woodall Title: Environmental Analyst Email: robert.d.woodall@exxonmobil.com Date: 09/04/2025
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QUESTIONS, Page 7

Action 502636

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 502636
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

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CONDITIONS

Action 502636

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 502636
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your Remediation Closure Report for Incident #NAPP2317142256 JAMES RANCH UNIT 19 TANK BATTERY, thank you. This Remediation Closure Report is approved.	10/17/2025