District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

| | |
|---|---|
| Incident ID | NAPP2213941404 |
| District RP | |
| Facility ID | |
| Application ID | |

# Release Notification

## Responsible Party

| | |
|---|---|
| Responsible Party XTO Energy | OGRID 5380 |
| Contact Name Garrett Green | Contact Telephone 575-200-0729 |
| Contact email garrett.green@exxonmobil.com | Incident # *(assigned by OCD)* |
| Contact mailing address 3104 E. Greene Street, Carlsbad, New Mexico, 88220 | |

## Location of Release Source

Latitude 32.13540 Longitude -103.99411
*(NAD 83 in decimal degrees to 5 decimal places)*

| | |
|---|---|
| Site Name Corral Canyon 16 SWD | Site Type Salt Water Disposal |
| Date Release Discovered 5/5/2022 | API# *(if applicable)* |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| D | 16 | 25S | 29E | Eddy |

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (*Name:* _____)

## Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

| | | |
|---|---|---|
| ☒ Crude Oil | Volume Released (bbls) 140.00 | Volume Recovered (bbls) 140.00 |
| ☐ Produced Water | Volume Released (bbls) | Volume Recovered (bbls) |
| | Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l? | ☐ Yes ☐ No |
| ☐ Condensate | Volume Released (bbls) | Volume Recovered (bbls) |
| ☐ Natural Gas | Volume Released (Mcf) | Volume Recovered (Mcf) |
| ☐ Other (describe) | Volume/Weight Released (provide units) | Volume/Weight Recovered (provide units) |

Cause of Release: The 2" balon valve separated from the threads due to thermal expansion, releasing fluids into impermeable containment. A vacuum truck was dispatched and recovered all fluids. A 48-hour liner inspection notice was sent to NMOCD District 2. Liner was visually inspected and determined not to be operating as designed. A third-party contractor has been retained for remediation purposes.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAPP2213941404 |
| District RP | |
| Facility ID | |
| Application ID | |

| | |
|---|---|
| Was this a major release as defined by 19.15.29.7(A) NMAC?<br><br>☒ Yes ☐ No | If YES, for what reason(s) does the responsible party consider this a major release?<br>A release greater than 25 barrels. |

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Yes, by Garrett Green to ocd.enviro@state.nm.us; Bratcher, Mike, EMNRD; Hamlet, Robert, EMNRD; Jarrett, Ryan; on Friday, May 6, 2022 8:40 AM via email.

## Initial Response

*The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury*

- ☒ The source of the release has been stopped.
- ☒ The impacted area has been secured to protect human health and the environment.
- ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
- ☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:
NA

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Garrett Green
Title: SSHE Coordinator
Signature: Garrett Green
Date: 05/19/2022
email: garrett.green@exxonmobil.com
Telephone: 575-200-0729

**OCD Only**

Received by: Jocelyn Harimon
Date: 05/19/2022

| Location: | Corral Canyon 16 SWD | |
|---|---|---|
| Spill Date: | 5/5/2022 | |
| **Area 1** | | |
| Approximate Area = | 786.04 | cu.ft. |
| VOLUME OF LEAK | | |
| Total Crude Oil = | 140.00 | bbls |
| Total Produced Water = | 0.00 | bbls |
| **TOTAL VOLUME OF LEAK** | | |
| **Total Crude Oil =** | **140.00** | **bbls** |
| **Total Produced Water =** | **0.00** | **bbls** |
| **TOTAL VOLUME RECOVERED** | | |
| **Total Crude Oil =** | **140.00** | **bbls** |
| **Total Produced Water =** | **0.00** | **bbls** |

**District I**
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
**District II**
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
**District III**
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
**District IV**
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

# State of New Mexico
# Energy, Minerals and Natural Resources
# Oil Conservation Division
# 1220 S. St Francis Dr.
# Santa Fe, NM 87505



## CONDITIONS

| | |
|---|---|
| Operator:<br>XTO ENERGY, INC<br>6401 Holiday Hill Road<br>Midland, TX 79707 | OGRID:<br>5380 |
| | Action Number:<br>108680 |
| | Action Type:<br>[C-141] Release Corrective Action (C-141) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| jharimon | None | 5/19/2022 |

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAPP2213941404 |
| District RP | |
| Facility ID | |
| Application ID | |

# Site Assessment/Characterization

*This information must be provided to the appropriate district office no later than 90 days after the release discovery date.*

| | |
|---|---|
| What is the shallowest depth to groundwater beneath the area affected by the release? | >100 (ft bgs) |
| Did this release impact groundwater or surface water? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 1000 feet of any other fresh water well or spring? | ☐ Yes ☒ No |
| Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of a wetland? | ☐ Yes ☒ No |
| Are the lateral extents of the release overlying a subsurface mine? | ☐ Yes ☒ No |
| Are the lateral extents of the release overlying an unstable area such as karst geology? | ☐ Yes ☒ No |
| Are the lateral extents of the release within a 100-year floodplain? | ☐ Yes ☒ No |
| Did the release impact areas **not** on an exploration, development, production, or storage site? | ☐ Yes ☒ No |

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

**Characterization Report Checklist**: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAPP2213941404 |
| District RP | |
| Facility ID | |
| Application ID | |

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: ___Garrett Green_____ Title: __Environmental Coordinator_____

Signature:_____ Date: __8/3/2022_____

email: __Garrett.Green@ExxonMobil.com_____ Telephone: ___575-200-0729_____

**OCD Only**

Received by: __Jocelyn Harimon_____ Date: 08/03/2022

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAPP2213941404 |
| District RP | |
| Facility ID | |
| Application ID | |

# Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

**Closure Report Attachment Checklist**: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Garret Green Title: Environmental Coordinator

Signature: Garret Green Date: 8/3/2022

email: Garrett.Green@ExxonMobil.com Telephone: 575-200-0729

**OCD Only**

Received by: Jocelyn Harimon Date: 08/03/2022

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Jennifer Nobui Date: 08/29/2022

Printed Name: Jennifer Nobui Title: Environmental Specialist A

ENSOLUM

August 3, 2022

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

**Re: Closure Request**
**Corral Canyon 16 SWD**
**Incident Number NAPP2213941404**
**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 site assessment and soil sampling activities at the Corral Canyon 16 SWD (Site). The purpose of the site assessment and soil sampling activities was to assess for the presence or absence of impacts to soil following a release of crude oil within lined containment at the Site. Based on field observations, field screening activities, and soil sample laboratory analytical results, XTO is submitting this Closure Request for Incident Number NAPP2213941404.

## SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit D, Section 16, Township 25 South, Range 29 East, in Eddy County, New Mexico (32.13540° N, 103.99411°W) and is associated with oil and gas exploration and production operations on New Mexico State Land.

On May 5, 2022, a valve separated from the threads, resulting in the release of approximately 140 barrels (bbls) of crude oil into the lined tank battery containment. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; all 140 bbls of released crude oil were recovered from within the lined containment. A 48-hour advance notice of liner inspection was provided via email to the New Mexico Oil Conservation Division (NMOCD) District II office. A liner integrity inspection was conducted by XTO personnel following fluid recovery. Upon inspection, the liner was determined to be insufficient. XTO reported the release to the NMOCD via email on May 6, 2022, and submitted a Release Notification Form C-141 (Form C-141) on May 19, 2022. The release was assigned Incident Number NAPP2213941404.

## SITE CHARATERIZATION AND CLOSURE CRITERIA

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

Depth to groundwater at the Site is greater than 100 feet below ground surface (bgs) based on a recent soil boring drilled for determination of regional groundwater depth. On April 19, 2021, a soil boring (C-4503) was drilled within 0.2 miles of the Site utilizing a track-mounted hollow-stem auger rig. Soil boring C-4503 was drilled to a depth of 110 feet bgs. The location of the borehole is approximately 846 feet north of the release area and is depicted on Figure 1. A field geologist logged and described soils continuously. No moisture or groundwater was encountered during drilling activites. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater beneath the Site is greater than 110 feet bgs. The borehole was properly abandoned with drill cuttings and hydrated bentonite chips. The Well Record and Log is included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a freshwater wetland, located approximately 1,608 feet west of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (medium potential karst designation area). Site receptors are identified on Figure 1.

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

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

## SITE ASSESSMENT ACTIVITIES

On July 8, 2022 and July 19, 2022, Ensolum personnel visited the Site to evaluate the release extent and conduct site assessment activities. One borehole (BH01) was advanced via hand auger near the location of the tear in the liner to assess the vertical extent of impacted soil. Two delineation soil samples (BH01/BH01A) were collected from the borehole at depths of approximately 0.5 feet and 1-foot bgs before encountering auger refusal. Four additional lateral delineation soil samples (SS01 through SS04) were collected around the lined containment at a depth of 0.5 feet bgs to confirm the lateral extent of the release. Soil from the delineation soil sample locations was 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 from the borehole were documented on lithologic/soil sampling logs, which are included as Appendix B. The borehole was backfilled with the soil removed and XTO repaired the tear in the liner. The delineation soil sample locations are depicted on Figure 2. Photographic documentation is included in Appendix C.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of BTEX following United States

Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

## LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for the delineation soil samples BH01 and BH01A collected from borehole, indicated benzene, BTEX, TPH-DRO/TPH-GRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Additionally, laboratory analytical results for lateral delineation soil samples SS01 through SS04 indicated benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria and compliant with the most stringent Table 1 Closure Criteria and successfully define the lateral extent of the release. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix D.

## CLOSURE REQUEST

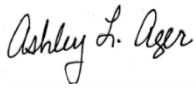
Following the failed liner integrity inspection at the Site, Ensolum personnel advanced one borehole (BH01) within the lined containment to assess for the presence or absence of impacted soil resulting from the May 5, 2022 crude oil release within lined containment. Two delineation soil samples were collected from borehole BH01, at depths of approximately 0.5 feet and 1-foot bgs. Laboratory analytical results for the delineation soil samples BH01 and BH01A collected from borehole, indicated benzene, BTEX, TPH-DRO/TPH-GRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Additionally, delineation soil samples SS01 through SS04 were compliant with the Site Closure Criteria and compliant with the most stringent Table 1 Closure Criteria. The release was contained laterally by the lined containment and all released fluids were recovered during initial response activities. The tear in the liner was subsequently repaired.

Based on initial response efforts, absence of elevated field screening results, and soil sample laboratory analytical results compliant with the Closure Criteria directly beneath the tear in the liner, XTO respectfully requests NFA for Incident Number NAPP2213941404.

If you have any questions or comments, please contact Ms. Ashley Ager at (970) 946-1093 or aager@ensolum.com.

Sincerely,
**Ensolum, LLC**

Kalei Jennings
Senior Scientist



Ashley Ager
Program Director

cc: Garrett Green, XTO
Shelby Pennington, XTO
New Mexico State Land

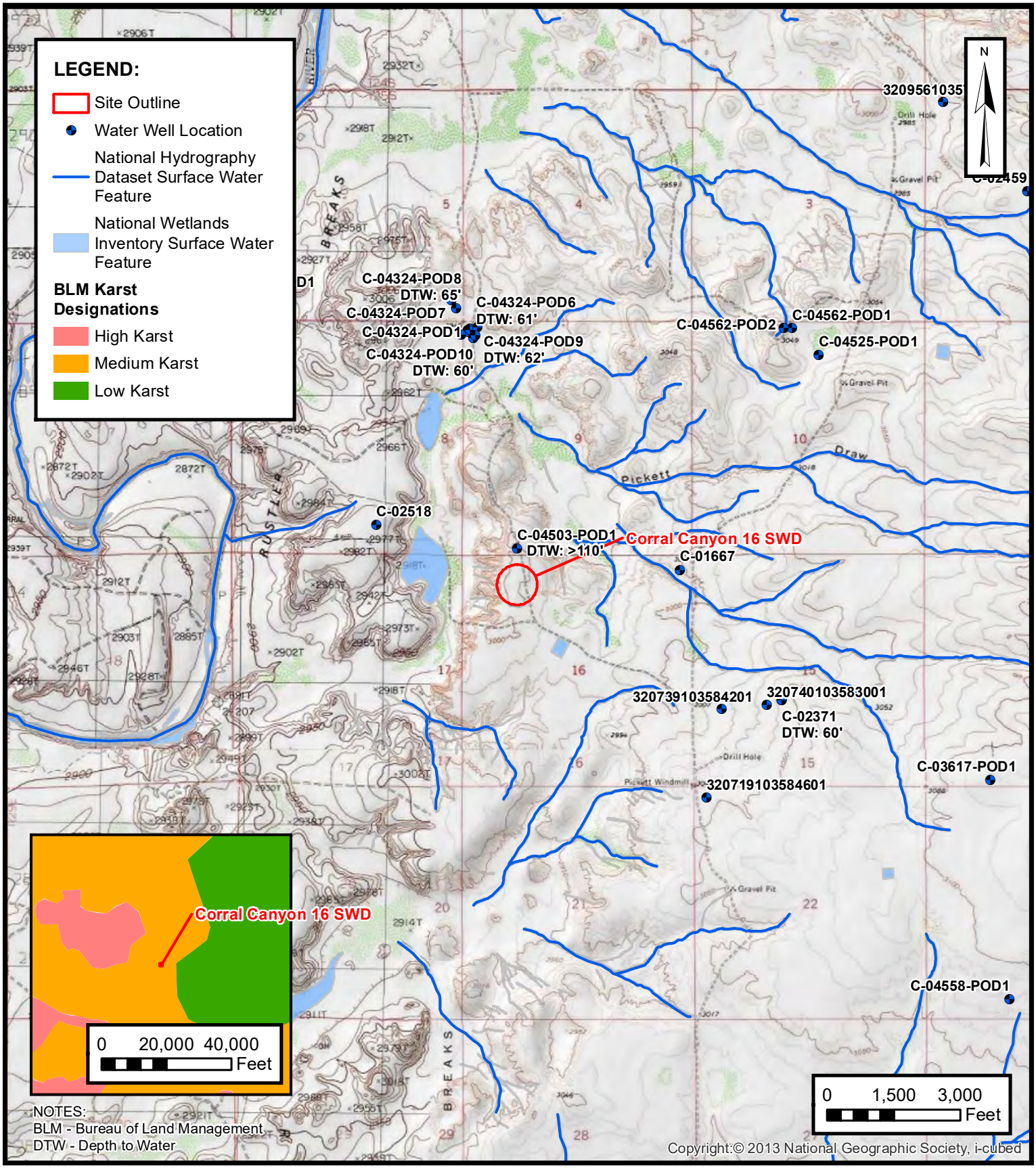
Appendices:

Figure 1 Site Receptor Map

Figure 2 Delineation Soil Sample Locations
Table 1 Soil Sample Analytical Results
Appendix A Well Record and Log
Appendix B Lithologic / Soil Sampling Logs
Appendix C Photographic Log
Appendix D Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix E NMOCD Sample Notification

ENSOLUM

# FIGURES




ENSOLUM
Environmental & Hydrogeologic Consultants

**SITE RECEPTOR MAP**

XTO ENERGY, INC
CORRAL CANYON 16 SWD
NAPP2213941404
Unit D, Section 16, Township 25S, Range 29E
Eddy County, New Mexico

**FIGURE**
**1**


ENSOLUM
Environmental & Hydrogeologic Consultants

**DELINEATION SOIL SAMPLES**

XTO ENERGY, INC
CORRAL CANYON 16 SWD
NAPP2213941404
Unit D, Section 16, Township 25S, Range 29E
Eddy County, New Mexico

**FIGURE**
**2**

ENSOLUM

# TABLES

ENSOLUM

**TABLE 1**
**SOIL SAMPLE ANALYTICAL RESULTS**
**XTO Energy, Inc. - Corral Canyon 16 SWD**
**Eddy County, New Mexico**

| Sample I.D. | Sample Date | Sample Depth (feet bgs) | Benzene (mg/kg) | Total BTEX (mg/kg) | TPH GRO (mg/kg) | TPH DRO (mg/kg) | TPH ORO (mg/kg) | GRO+DRO (mg/kg) | Total TPH (mg/kg) | Chloride (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| **NMOCD Table 1 Closure Criteria (NMAC 19.15.29)** | | | **10** | **50** | **NE** | **NE** | **NE** | **1,000** | **2,500** | **20,000** |
| **Delineation Soil Sample Analytical Results** | | | | | | | | | | |
| BH01 | 07/08/2022 | 0.5 | <0.00201 | <0.00402 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 877 |
| BH01A | 07/08/2022 | 1 | <0.00202 | <0.00404 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 935 |
| SS01 | 07/19/2022 | 0.5 | <0.00201 | <0.00402 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 95.9 |
| SS02 | 07/19/2022 | 0.5 | <0.00200 | <0.00401 | <49.8 | <50.0 | <50.0 | <50.0 | <50.0 | 26.1 |
| SS03 | 07/19/2022 | 0.5 | <0.00200 | <0.00399 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 254 |
| SS04 | 07/19/2022 | 0.5 | <0.00199 | <0.00396 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 108 |

Notes:

bgs: below ground surface
mg/kg: milligrams per kilogram
NMOCD: New Mexico Oil Conservation Division
BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes
GRO: Gasoline Range Organics
DRO: Diesel Range Organics
ORO: Oil Range Organics
TPH: Total Petroleum Hydrocarbon
Concentrations in bold exceed the NMOCD Table 1 Closure Criteria for Soils Impacted by a Release

ENSOLUM

# APPENDIX A

## Well Record and Log

# WELL RECORD & LOG

## OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

**1. GENERAL AND WELL LOCATION**

| OSE POD NO. (WELL NO.) | WELL TAG ID NO. | OSE FILE NO(S). |
|---|---|---|
| POD1 (BH-01) | n/a | C-4503 |

| WELL OWNER NAME(S) | PHONE (OPTIONAL) |
|---|---|
| XTO Energy (Kyle Littrell) | |

| WELL OWNER MAILING ADDRESS | CITY | STATE | ZIP |
|---|---|---|---|
| 6401 Holiday Hill Dr. | Midland | TX | 79707 |

| WELL LOCATION (FROM GPS) | | DEGREES | MINUTES | SECONDS | |
|---|---|---|---|---|---|
| | LATITUDE | 32 | 8 | 15.74 | N |
| | LONGITUDE | 103 | 59 | 38.34 | W |

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHJIP, RANGE) WHERE AVAILABLE

SWSW S9 T25S R29E

**2. DRILLING & CASING INFORMATION**

| LICENSE NO. | NAME OF LICENSED DRILLER | NAME OF WELL DRILLING COMPANY |
|---|---|---|
| 1249 | Jackie D. Atkins | Atkins Engineering Associates, Inc. |

| DRILLING STARTED | DRILLING ENDED | DEPTH OF COMPLETED WELL (FT) | BORE HOLE DEPTH (FT) | DEPTH WATER FIRST ENCOUNTERED (FT) |
|---|---|---|---|---|
| 04/19/2021 | 04/19/2021 | temporary well material | 110 | n/a |

COMPLETED WELL IS: ☐ ARTESIAN ☑ DRY HOLE ☐ SHALLOW (UNCONFINED) — STATIC WATER LEVEL IN COMPLETED WELL (FT): n/a

DRILLING FLUID: ☐ AIR ☐ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☐ ROTARY ☐ HAMMER ☐ CABLE TOOL ☑ OTHER – SPECIFY: Hollow Stem Auger

| DEPTH (feet bgl) FROM | DEPTH (feet bgl) TO | BORE HOLE DIAM (inches) | CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen) | CASING CONNECTION TYPE (add coupling diameter) | CASING INSIDE DIAM. (inches) | CASING WALL THICKNESS (inches) | SLOT SIZE (inches) |
|---|---|---|---|---|---|---|---|
| 0 | 110 | ±6.5 | Boring- HSA | – | – | – | – |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

OSE DII MAY 5 2021 PM 1:06

**3. ANNULAR MATERIAL**

| DEPTH (feet bgl) FROM | DEPTH (feet bgl) TO | BORE HOLE DIAM. (inches) | LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL | AMOUNT (cubic feet) | METHOD OF PLACEMENT |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/30/17)

| FILE NO. C-4503 | POD NO. 1 | TRN NO. 682792 |
|---|---|---|
| LOCATION Exp1 25S.29E.9.334 | WELL TAG ID NO. | PAGE 1 OF 2 |

**4. HYDROGEOLOGIC LOG OF WELL**

| DEPTH (feet bgl) FROM | DEPTH (feet bgl) TO | THICKNESS (feet) | COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units) | WATER BEARING? (YES / NO) | ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm) |
|---|---|---|---|---|---|
| 0 | 4 | 4 | Caliche, tan, off-white,dry, tan sand m-f grained, well sorted, trace silt | Y ✓ N | |
| 4 | 41 | 37 | Sand, tan, m-f, well sorted, little caliche gravel, tan, trace silt, low consolidation | Y ✓ N | |
| 41 | -- | -- | Sandy clay, brown, non plastic, non cohesive, no odor, no stain, m-f grained, wel | Y ✓ N | |
| 43 | 46 | 5 | increase in clay content, low plasticity Claystone,brown, light brown mottling, | Y ✓ N | |
| 46 | 110 | 64 | Claystone,brown, light brown mottling, cohesive, medium plasticity | Y ✓ N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

**5. TEST; RIG SUPERVISION**

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION: Corral Canyon 212H. Temporary well materials removed and the soil boring backfilled using drill cuttings from total depth to ten feet below ground surface, then hydrated bentonite chips from ten feet below ground surface to surface.
Logs adapted from WSP on-site geologist.

OSE DII MAY 5 2021 PM4:04

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Shane Eldridge

**6. SIGNATURE**

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:

Jack Atkins — Jackie D. Atkins — 05/05/2021

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/30/2017)

| FILE NO. C-4503 | POD NO. 1 | TRN NO. 682792 |
|---|---|---|
| LOCATION | WELL TAG ID NO. | PAGE 2 OF 2 |

# PLUGGING RECORD

**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: C-4503- POD1

Well owner: XTO ENERGY (Kyle Littrell) Phone No.: 432.682.8873

Mailing address: 6401 Holiday Hill Dr.

City: Midland State: Texas Zip code: 79707

## II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Jackie D. Atkins ( Atkins Engineering Associates Inc.)

2) New Mexico Well Driller License No.: 1249 Expiration Date: 04/30/23

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Shane Eldridge

4) Date well plugging began: 04/27/2021 Date well plugging concluded: 04/27/2021

5) GPS Well Location: Latitude: 32 deg, 8 min, 15.74 sec
Longitude: 103 deg, 59 min, 38.34 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 110 ft below ground level (bgl), by the following manner: weighted tape

7) Static water level measured at initiation of plugging: n/a ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 12/08/2020

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

RECEIVED OCD MAY 5 2021 PM4:03

25S.29E.9.334

Version: September 8, 2009
Page 1 of 2

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

**For each interval plugged, describe within the following columns:**

| Depth (ft bgl) | Plugging Material Used (include any additives used) | Volume of Material Placed (gallons) | Theoretical Volume of Borehole/ Casing (gallons) | Placement Method (tremie pipe, other) | Comments ("casing perforated first", "open annular space also plugged", etc.) |
|---|---|---|---|---|---|
| | 0-10' Hydrated Bentonite | Approx. 15.8 gallons | 16 gallons | Augers | |
| | 10'-110' Drill Cuttings | Approx. 172 gallons | 172 gallons | Boring | |

OSE DIT MAY 5 2021 PM4:03

| MULTIPLY | | BY | | AND OBTAIN |
|---|---|---|---|---|
| cubic feet | x | 7.4805 | = | gallons |
| cubic yards | x | 201.97 | = | gallons |

**III. SIGNATURE:**

I, Jackie D. Atkins, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Jack Atkins

Signature of Well Driller

05/05/2021

Date

Version: September 8, 2009
Page 2 of 2

ENSOLUM

# APPENDIX B

## Lithologic Soil Sampling Logs

ENSOLUM

| | | |
|---|---|---|
| | Sample Name: **BH01** | Date: **07/08/2022** |
| | Site Name: **Corral Canyon 16 SWD** | |
| | Incident Number: **NAPP2213941404** | |
| | Job Number: 03E1558071 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: CB | Method: **Hand-Auger** |
| Coordinates: | Hole Diameter: NA | Total Depth: **1'** |

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

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample ID | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithologic Descriptions |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 0 | | |
| M | 2,122 | 0.5 | Y | BH01 | 0.5 | 0.5 | CCHE | moist, fine sand, light brown, poorly graded sand, non-cohesive, no odor. |
| M | 1,848 | 0.3 | Y | BH01A | 1 | 1 | CCHE | SAA. |

TD @ 1-foot bgs

ENSOLUM

# APPENDIX C

## Photographic Log

**Photographic Log**
XTO Energy, Inc.
Corral Canyon 16 SWD
Incident Number NAPP2213941404

Photograph 1
Date: July 8 2022
Description: View of release compromised liner location.

Photograph 2
Date: July 8, 2022
Description: View of delineation activities near BH01 location.

ENSOLUM

# APPENDIX D

## Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing America

# ANALYTICAL REPORT

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

Laboratory Job ID: 890-2516-1
Laboratory Sample Delivery Group: 03E1558071
Client Project/Site: CORRAL CANYON 16 SWD

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

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*7/19/2022 2:10:33 PM*

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

LINKS
Review your project results through my EOL
Have a Question? Ask The Expert
Visit us at: www.eurofinsus.com/Env

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

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

Client: Ensolum
Project/Site: CORRAL CANYON 16 SWD

Laboratory Job ID: 890-2516-1
SDG: 03E1558071

# Table of Contents


Cover Page . . . . . 1
Table of Contents . . . . . 2
Definitions/Glossary . . . . . 3
Case Narrative . . . . . 4
Client Sample Results . . . . . 5
Surrogate Summary . . . . . 7
QC Sample Results . . . . . 8
QC Association Summary . . . . . 12
Lab Chronicle . . . . . 14
Certification Summary . . . . . 15
Method Summary . . . . . 16
Sample Summary . . . . . 17
Chain of Custody . . . . . 18
Receipt Checklists . . . . . 20

# Definitions/Glossary

Client: Ensolum
Project/Site: CORRAL CANYON 16 SWD

Job ID: 890-2516-1
SDG: 03E1558071

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum
Project/Site: CORRAL CANYON 16 SWD

Job ID: 890-2516-1
SDG: 03E1558071

## Job ID: 890-2516-1

### Laboratory: Eurofins Carlsbad

**Narrative**

**Job Narrative**
**890-2516-1**

**Receipt**
The samples were received on 7/8/2022 4:28 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 12.0°C

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

**GC Semi VOA**
Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-29563 and analytical batch 880-29603 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

**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: CORRAL CANYON 16 SWD

Job ID: 890-2516-1
SDG: 03E1558071

## Client Sample ID: BH01

**Date Collected: 07/08/22 12:15**
**Date Received: 07/08/22 16:28**
**Sample Depth: .5**

**Lab Sample ID: 890-2516-1**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.00201 | | mg/Kg | | 07/14/22 10:08 | 07/16/22 00:31 | 1 |
| Toluene | <0.00201 | U | 0.00201 | | mg/Kg | | 07/14/22 10:08 | 07/16/22 00:31 | 1 |
| Ethylbenzene | <0.00201 | U | 0.00201 | | mg/Kg | | 07/14/22 10:08 | 07/16/22 00:31 | 1 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.00402 | | mg/Kg | | 07/14/22 10:08 | 07/16/22 00:31 | 1 |
| o-Xylene | <0.00201 | U | 0.00201 | | mg/Kg | | 07/14/22 10:08 | 07/16/22 00:31 | 1 |
| Xylenes, Total | <0.00402 | U | 0.00402 | | mg/Kg | | 07/14/22 10:08 | 07/16/22 00:31 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *111* | | *70 - 130* | *07/14/22 10:08* | *07/16/22 00:31* | *1* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* | *07/14/22 10:08* | *07/16/22 00:31* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00402 | U | 0.00402 | | mg/Kg | | | 07/18/22 14:30 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 07/14/22 08:59 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 07/12/22 15:30 | 07/13/22 18:18 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 07/12/22 15:30 | 07/13/22 18:18 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 07/12/22 15:30 | 07/13/22 18:18 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *91* | | *70 - 130* | *07/12/22 15:30* | *07/13/22 18:18* | *1* |
| *o-Terphenyl* | *102* | | *70 - 130* | *07/12/22 15:30* | *07/13/22 18:18* | *1* |

### Method: 300.0 - Anions, Ion Chromatography - Soluble

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **877** | | 4.95 | | mg/Kg | | | 07/19/22 13:31 | 1 |

## Client Sample ID: BH01A

**Date Collected: 07/08/22 12:25**
**Date Received: 07/08/22 16:28**
**Sample Depth: 1**

**Lab Sample ID: 890-2516-2**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.00202 | | mg/Kg | | 07/14/22 10:08 | 07/16/22 00:51 | 1 |
| Toluene | <0.00202 | U | 0.00202 | | mg/Kg | | 07/14/22 10:08 | 07/16/22 00:51 | 1 |
| Ethylbenzene | <0.00202 | U | 0.00202 | | mg/Kg | | 07/14/22 10:08 | 07/16/22 00:51 | 1 |
| m-Xylene & p-Xylene | <0.00404 | U | 0.00404 | | mg/Kg | | 07/14/22 10:08 | 07/16/22 00:51 | 1 |
| o-Xylene | <0.00202 | U | 0.00202 | | mg/Kg | | 07/14/22 10:08 | 07/16/22 00:51 | 1 |
| Xylenes, Total | <0.00404 | U | 0.00404 | | mg/Kg | | 07/14/22 10:08 | 07/16/22 00:51 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *112* | | *70 - 130* | *07/14/22 10:08* | *07/16/22 00:51* | *1* |

# Client Sample Results

Client: Ensolum
Project/Site: CORRAL CANYON 16 SWD

Job ID: 890-2516-1
SDG: 03E1558071

## Client Sample ID: BH01A

**Date Collected: 07/08/22 12:25**
**Date Received: 07/08/22 16:28**
**Sample Depth: 1**

## Lab Sample ID: 890-2516-2

**Matrix: Solid**

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

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *107* | | *70 - 130* | *07/14/22 10:08* | *07/16/22 00:51* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00404 | U | 0.00404 | | mg/Kg | | | 07/18/22 14:30 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 07/14/22 08:59 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 07/12/22 15:30 | 07/13/22 18:40 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 07/12/22 15:30 | 07/13/22 18:40 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 07/12/22 15:30 | 07/13/22 18:40 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *87* | | *70 - 130* | *07/12/22 15:30* | *07/13/22 18:40* | *1* |
| *o-Terphenyl* | *100* | | *70 - 130* | *07/12/22 15:30* | *07/13/22 18:40* | *1* |

### Method: 300.0 - Anions, Ion Chromatography - Soluble

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **935** | | 25.0 | | mg/Kg | | | 07/19/22 13:40 | 5 |

# Surrogate Summary

Client: Ensolum
Project/Site: CORRAL CANYON 16 SWD

Job ID: 890-2516-1
SDG: 03E1558071

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | BFB1 | DFBZ1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-2515-A-33-D MS | Matrix Spike | 98 | 100 |
| 890-2515-A-33-E MSD | Matrix Spike Duplicate | 97 | 98 |
| 890-2516-1 | SS 0.5 | 111 | 108 |
| 890-2516-2 | SS 1 | 112 | 107 |
| LCS 880-29739/1-A | Lab Control Sample | 97 | 98 |
| LCSD 880-29739/2-A | Lab Control Sample Dup | 102 | 96 |
| MB 880-29722/5-A | Method Blank | 106 | 108 |
| MB 880-29739/5-A | Method Blank | 102 | 108 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-2515-A-21-F MS | Matrix Spike | 79 | 92 |
| 890-2515-A-21-G MSD | Matrix Spike Duplicate | 80 | 93 |
| 890-2516-1 | SS 0.5 | 91 | 102 |
| 890-2516-2 | SS 1 | 87 | 100 |
| LCS 880-29563/2-A | Lab Control Sample | 99 | 112 |
| LCSD 880-29563/3-A | Lab Control Sample Dup | 102 | 113 |
| MB 880-29563/1-A | Method Blank | 100 | 118 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: CORRAL CANYON 16 SWD

Job ID: 890-2516-1
SDG: 03E1558071

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

**Lab Sample ID: MB 880-29722/5-A**
**Matrix: Solid**
**Analysis Batch: 29790**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 29722**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/14/22 09:52 | 07/15/22 11:11 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/14/22 09:52 | 07/15/22 11:11 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/14/22 09:52 | 07/15/22 11:11 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 07/14/22 09:52 | 07/15/22 11:11 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/14/22 09:52 | 07/15/22 11:11 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 07/14/22 09:52 | 07/15/22 11:11 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* | *07/14/22 09:52* | *07/15/22 11:11* | *1* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* | *07/14/22 09:52* | *07/15/22 11:11* | *1* |

**Lab Sample ID: MB 880-29739/5-A**
**Matrix: Solid**
**Analysis Batch: 29790**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 29739**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/14/22 10:08 | 07/15/22 23:27 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/14/22 10:08 | 07/15/22 23:27 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/14/22 10:08 | 07/15/22 23:27 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 07/14/22 10:08 | 07/15/22 23:27 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/14/22 10:08 | 07/15/22 23:27 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 07/14/22 10:08 | 07/15/22 23:27 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *70 - 130* | *07/14/22 10:08* | *07/15/22 23:27* | *1* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* | *07/14/22 10:08* | *07/15/22 23:27* | *1* |

**Lab Sample ID: LCS 880-29739/1-A**
**Matrix: Solid**
**Analysis Batch: 29790**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 29739**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09154 | | mg/Kg | | 92 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.08982 | | mg/Kg | | 90 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.08005 | | mg/Kg | | 80 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1608 | | mg/Kg | | 80 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.08701 | | mg/Kg | | 87 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *98* | | *70 - 130* |

**Lab Sample ID: LCSD 880-29739/2-A**
**Matrix: Solid**
**Analysis Batch: 29790**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 29739**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.07913 | | mg/Kg | | 79 | 70 - 130 | 15 | 35 |

Eurofins Carlsbad

# QC Sample Results

Client: Ensolum
Project/Site: CORRAL CANYON 16 SWD

Job ID: 890-2516-1
SDG: 03E1558071

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

**Lab Sample ID: LCSD 880-29739/2-A**
**Matrix: Solid**
**Analysis Batch: 29790**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 29739**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Toluene | | | 0.100 | 0.08469 | | mg/Kg | | 85 | 70 - 130 | 6 | 35 |
| Ethylbenzene | | | 0.100 | 0.07885 | | mg/Kg | | 79 | 70 - 130 | 2 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1600 | | mg/Kg | | 80 | 70 - 130 | 0 | 35 |
| o-Xylene | | | 0.100 | 0.08634 | | mg/Kg | | 86 | 70 - 130 | 1 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *96* | | *70 - 130* |

**Lab Sample ID: 890-2515-A-33-D MS**
**Matrix: Solid**
**Analysis Batch: 29790**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 29739**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.101 | 0.09282 | | mg/Kg | | 92 | 70 - 130 |
| Toluene | <0.00199 | U | 0.101 | 0.08759 | | mg/Kg | | 87 | 70 - 130 |
| Ethylbenzene | <0.00199 | U | 0.101 | 0.07718 | | mg/Kg | | 77 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.201 | 0.1511 | | mg/Kg | | 75 | 70 - 130 |
| o-Xylene | <0.00199 | U | 0.101 | 0.08237 | | mg/Kg | | 82 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* |

**Lab Sample ID: 890-2515-A-33-E MSD**
**Matrix: Solid**
**Analysis Batch: 29790**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 29739**

| 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 | 0.09466 | | mg/Kg | | 94 | 70 - 130 | 2 | 35 |
| Toluene | <0.00199 | U | 0.100 | 0.08989 | | mg/Kg | | 90 | 70 - 130 | 3 | 35 |
| Ethylbenzene | <0.00199 | U | 0.100 | 0.07866 | | mg/Kg | | 79 | 70 - 130 | 2 | 35 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.200 | 0.1542 | | mg/Kg | | 77 | 70 - 130 | 2 | 35 |
| o-Xylene | <0.00199 | U | 0.100 | 0.08371 | | mg/Kg | | 84 | 70 - 130 | 2 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *98* | | *70 - 130* |

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

**Lab Sample ID: MB 880-29563/1-A**
**Matrix: Solid**
**Analysis Batch: 29603**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 29563**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 07/12/22 15:30 | 07/13/22 10:27 | 1 |

# QC Sample Results

Client: Ensolum
Project/Site: CORRAL CANYON 16 SWD

Job ID: 890-2516-1
SDG: 03E1558071

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

**Lab Sample ID: MB 880-29563/1-A**
**Matrix: Solid**
**Analysis Batch: 29603**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 29563**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 07/12/22 15:30 | 07/13/22 10:27 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 07/12/22 15:30 | 07/13/22 10:27 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *100* | | *70 - 130* | *07/12/22 15:30* | *07/13/22 10:27* | *1* |
| *o-Terphenyl* | *118* | | *70 - 130* | *07/12/22 15:30* | *07/13/22 10:27* | *1* |

**Lab Sample ID: LCS 880-29563/2-A**
**Matrix: Solid**
**Analysis Batch: 29603**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 29563**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 877.2 | | mg/Kg | | 88 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 913.4 | | mg/Kg | | 91 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *99* | | *70 - 130* |
| *o-Terphenyl* | *112* | | *70 - 130* |

**Lab Sample ID: LCSD 880-29563/3-A**
**Matrix: Solid**
**Analysis Batch: 29603**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 29563**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 889.2 | | mg/Kg | | 89 | 70 - 130 | 1 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 975.7 | | mg/Kg | | 98 | 70 - 130 | 7 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *102* | | *70 - 130* |
| *o-Terphenyl* | *113* | | *70 - 130* |

**Lab Sample ID: 890-2515-A-21-F MS**
**Matrix: Solid**
**Analysis Batch: 29603**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 29563**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U F1 | 996 | <49.8 | U F1 | mg/Kg | | 0 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 | 996 | <49.8 | U F1 | mg/Kg | | 0 | 70 - 130 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *79* | | *70 - 130* |
| *o-Terphenyl* | *92* | | *70 - 130* |

# QC Sample Results

Client: Ensolum
Project/Site: CORRAL CANYON 16 SWD

Job ID: 890-2516-1
SDG: 03E1558071

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

**Lab Sample ID: 890-2515-A-21-G MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 29603** — **Prep Batch: 29563**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U F1 | 998 | <49.9 | U F1 | mg/Kg | | 0 | 70 - 130 | NC | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 | 998 | <49.9 | U F1 | mg/Kg | | 0 | 70 - 130 | NC | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *80* | | *70 - 130* |
| *o-Terphenyl* | *93* | | *70 - 130* |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-29935/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 30010**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 07/19/22 12:35 | 1 |

**Lab Sample ID: LCS 880-29935/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 30010**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 250.8 | | mg/Kg | | 100 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-29935/3-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 30010**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 251.7 | | mg/Kg | | 101 | 90 - 110 | 0 | 20 |

**Lab Sample ID: 880-17005-A-1-B MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 30010**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 326 | | 251 | 561.6 | | mg/Kg | | 94 | 90 - 110 | | |

**Lab Sample ID: 880-17005-A-1-C MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 30010**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 326 | | 251 | 562.2 | | mg/Kg | | 94 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: CORRAL CANYON 16 SWD

Job ID: 890-2516-1
SDG: 03E1558071

## GC VOA

### Prep Batch: 29722

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-29722/5-A | Method Blank | Total/NA | Solid | 5035 | |

### Prep Batch: 29739

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2516-1 | SS 0.5 | Total/NA | Solid | 5035 | |
| 890-2516-2 | SS 1 | Total/NA | Solid | 5035 | |
| MB 880-29739/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-29739/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-29739/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-2515-A-33-D MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-2515-A-33-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 29790

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2516-1 | SS 0.5 | Total/NA | Solid | 8021B | 29739 |
| 890-2516-2 | SS 1 | Total/NA | Solid | 8021B | 29739 |
| MB 880-29722/5-A | Method Blank | Total/NA | Solid | 8021B | 29722 |
| MB 880-29739/5-A | Method Blank | Total/NA | Solid | 8021B | 29739 |
| LCS 880-29739/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 29739 |
| LCSD 880-29739/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 29739 |
| 890-2515-A-33-D MS | Matrix Spike | Total/NA | Solid | 8021B | 29739 |
| 890-2515-A-33-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 29739 |

### Analysis Batch: 29976

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2516-1 | SS 0.5 | Total/NA | Solid | Total BTEX | |
| 890-2516-2 | SS 1 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 29563

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2516-1 | SS 0.5 | Total/NA | Solid | 8015NM Prep | |
| 890-2516-2 | SS 1 | Total/NA | Solid | 8015NM Prep | |
| MB 880-29563/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-29563/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-29563/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-2515-A-21-F MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-2515-A-21-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 29603

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2516-1 | SS 0.5 | Total/NA | Solid | 8015B NM | 29563 |
| 890-2516-2 | SS 1 | Total/NA | Solid | 8015B NM | 29563 |
| MB 880-29563/1-A | Method Blank | Total/NA | Solid | 8015B NM | 29563 |
| LCS 880-29563/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 29563 |
| LCSD 880-29563/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 29563 |
| 890-2515-A-21-F MS | Matrix Spike | Total/NA | Solid | 8015B NM | 29563 |
| 890-2515-A-21-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 29563 |

# QC Association Summary

Client: Ensolum
Project/Site: CORRAL CANYON 16 SWD

Job ID: 890-2516-1
SDG: 03E1558071

## GC Semi VOA

### Analysis Batch: 29705

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2516-1 | SS 0.5 | Total/NA | Solid | 8015 NM | |
| 890-2516-2 | SS 1 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 29935

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2516-1 | SS 0.5 | Soluble | Solid | DI Leach | |
| 890-2516-2 | SS 1 | Soluble | Solid | DI Leach | |
| MB 880-29935/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-29935/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-29935/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 880-17005-A-1-B MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 880-17005-A-1-C MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 30010

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2516-1 | SS 0.5 | Soluble | Solid | 300.0 | 29935 |
| 890-2516-2 | SS 1 | Soluble | Solid | 300.0 | 29935 |
| MB 880-29935/1-A | Method Blank | Soluble | Solid | 300.0 | 29935 |
| LCS 880-29935/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 29935 |
| LCSD 880-29935/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 29935 |
| 880-17005-A-1-B MS | Matrix Spike | Soluble | Solid | 300.0 | 29935 |
| 880-17005-A-1-C MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 29935 |

# Lab Chronicle

Client: Ensolum
Project/Site: CORRAL CANYON 16 SWD

Job ID: 890-2516-1
SDG: 03E1558071

## Client Sample ID: SS 0.5

**Date Collected: 07/08/22 12:15**
**Date Received: 07/08/22 16:28**

**Lab Sample ID: 890-2516-1**
**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 | 29739 | 07/14/22 10:08 | EL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 29790 | 07/16/22 00:31 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 29976 | 07/18/22 14:30 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 29705 | 07/14/22 08:59 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 29563 | 07/12/22 15:30 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 29603 | 07/13/22 18:18 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 5.05 g | 50 mL | 29935 | 07/19/22 11:52 | SMC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 30010 | 07/19/22 13:31 | SMC | XEN MID |

## Client Sample ID: SS 1

**Date Collected: 07/08/22 12:25**
**Date Received: 07/08/22 16:28**

**Lab Sample ID: 890-2516-2**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 4.95 g | 5 mL | 29739 | 07/14/22 10:08 | EL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 29790 | 07/16/22 00:51 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 29976 | 07/18/22 14:30 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 29705 | 07/14/22 08:59 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 29563 | 07/12/22 15:30 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 29603 | 07/13/22 18:40 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 5 g | 50 mL | 29935 | 07/19/22 11:52 | SMC | XEN MID |
| Soluble | Analysis | 300.0 | | 5 | | | 30010 | 07/19/22 13:40 | SMC | XEN MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: CORRAL CANYON 16 SWD

Job ID: 890-2516-1
SDG: 03E1558071

## Laboratory: Eurofins Midland

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Texas | NELAP | T104704400-22-24 | 06-30-23 |

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

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

# Method Summary

Client: Ensolum
Project/Site: CORRAL CANYON 16 SWD

Job ID: 890-2516-1
SDG: 03E1558071

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

**Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: CORRAL CANYON 16 SWD

Job ID: 890-2516-1
SDG: 03E1558071

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-2516-1 | SS 0.5 | Solid | 07/08/22 12:15 | 07/08/22 16:28 | .5 |
| 890-2516-2 | SS 1 | Solid | 07/08/22 12:25 | 07/08/22 16:28 | 1 |

Page 44 of 132

eurofins | Environment Testing Xenco

# Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 2

CLP - Cooling in Process

| | | | |
|---|---|---|---|
| Project Manager: | Kalei Jennings | Bill to: (if different) | Garrett Green |
| Company Name: | Ensolum | 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: | 817-683-2503 | Email: | Garrett.Green@exxonmobile.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:

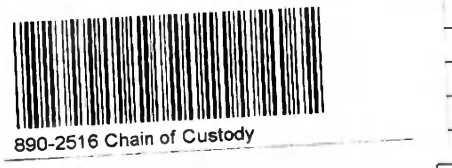
| | | | |
|---|---|---|---|
| Project Name: | Coral Canyon 16 Fed Com | Turn Around | ☑ Routine ☐ Rush |
| Project Number: | 03E155 8071 | Due Date: | |
| Project Location: | Eddy County | TAT starts the day received by the lab, if received by 4:30pm | |
| Sampler's Name: | Chris Brown | | |
| PO #: | | | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes (No) | Wet Ice: | (Yes) No |
| Samples Received Intact: | (Yes) No | Thermometer ID: | IR-007 |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No (N/A) | Temperature Reading: | 12.2 |
| Total Containers: | | Corrected Temperature: | 12.0 |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code | Parameters: CHL (EPA 300) | TPH (8015) | BTEX (8021) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SS 0.5 | S | 7-6-22 | 12:15 | .5 | G | 1 | | X | X | X | InC ID |
| SS 1 | S | 7-6-22 | 12:25 | 1' | G | 1 | | X | X | X | NAPP2213941404 |
| | | | | | | | | | | | CC 106773100 |

**Preservative Codes**

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




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

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 | Alex Cruz | 7.8.22 16:28 | 4 | | |
| 3 | | | 6 | | |
| 5 | | | | | |

Revised Date: 08/25/2020 Rev. 2020.2

Received by OCD: 8/3/2022 1:25:56 PM
Released to Imaging: 8/29/2022 11:52:44 AM
7/19/2022
Page 18 of 21

Page 45 of 132

eurofins | Environment Testing Xenco

# Chain of Custody

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

Work Order No: _____

www.xenco.com Page 2 of 2

| | | | |
|---|---|---|---|
| Project Manager: | Kalei Jennings | Bill to: (if different) | Garrett Green |
| Company Name: | Ensolum | 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: | 817-683-2503 | Email: | Garrett.Green@exxonmobile.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: | Corral Canyon 16 SWD | Turn Around | |
| Project Number: | 03E155 8071 | ☐ Routine ☐ Rush | |
| Project Location: | Eddy County | Due Date: | |
| Sampler's Name: | Chris Booth | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

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

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code | Parameters: CHL (EPA 300) | TPH (8015) | BTEX (8021) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SS 1.5 | S | 7.8.22 | 12:45 | 1.5' | G | 1 | | ✓ | ✓ | ✓ | Hold |

**Preservative Codes**

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

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

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 | | Cloe Cruz | 7.8.22 1628 | 2 | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |



Received by OCD: 8/3/2022 1:25:56 PM
Released to Imaging: 8/29/2022 11:52:44 AM
7/19/2022
Page 19 of 21

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2516-1
SDG Number: 03E1558071

**Login Number: 2516**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2516-1
SDG Number: 03E1558071

**Login Number: 2516**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 07/12/22 11:11 AM**

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

eurofins | Environment Testing America

# ANALYTICAL REPORT

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

Laboratory Job ID: 890-2614-1
Laboratory Sample Delivery Group: 03E1558071
Client Project/Site: Corral Canyon 16

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

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*7/25/2022 1:12:49 PM*

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

LINKS
Review your project results through my EOL
Have a Question? Ask The Expert
Visit us at: www.eurofinsus.com/Env

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

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

Client: Ensolum
Project/Site: Corral Canyon 16

Laboratory Job ID: 890-2614-1
SDG: 03E1558071

# Table of Contents

Cover Page . . . . . 1
Table of Contents . . . . . 2
Definitions/Glossary . . . . . 3
Case Narrative . . . . . 4
Client Sample Results . . . . . 5
Surrogate Summary . . . . . 6
QC Sample Results . . . . . 7
QC Association Summary . . . . . 11
Lab Chronicle . . . . . 13
Certification Summary . . . . . 14
Method Summary . . . . . 15
Sample Summary . . . . . 16
Chain of Custody . . . . . 17
Receipt Checklists . . . . . 18

# Definitions/Glossary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2614-1
SDG: 03E1558071

## 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, high biased. |
| F1 | MS and/or MSD recovery exceeds control limits. |
| F2 | MS/MSD RPD exceeds control limits |
| S1- | Surrogate recovery exceeds control limits, low biased. |
| S1+ | Surrogate recovery exceeds control limits, high biased. |
| U | Indicates the analyte was analyzed for but not detected. |

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2614-1
SDG: 03E1558071

## Job ID: 890-2614-1

### Laboratory: Eurofins Carlsbad

**Narrative**

**Job Narrative**
**890-2614-1**

**Receipt**
The sample was received on 7/21/2022 4:15 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 4.0°C

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

**GC Semi VOA**
Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-30432 and analytical batch 880-30368 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.

Method 8015MOD_NM: The diesel range was biased high in the LCS, however since only an LCS or LCSD are required the data was qualified and reported. (LCS 880-30432/2-A)

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: Corral Canyon 16

Job ID: 890-2614-1
SDG: 03E1558071

## Client Sample ID: SS4
**Date Collected: 07/19/22 11:45**
**Date Received: 07/21/22 16:15**
**Sample Depth: 6'**

## Lab Sample ID: 890-2614-1
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:11 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:11 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:11 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:11 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:11 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:11 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *109* | | *70 - 130* | *07/23/22 18:30* | *07/24/22 15:11* | *1* |
| *1,4-Difluorobenzene (Surr)* | *90* | | *70 - 130* | *07/23/22 18:30* | *07/24/22 15:11* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | | mg/Kg | | | 07/25/22 10:43 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 07/25/22 09:39 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U F1 F2 | 50.0 | | mg/Kg | | 07/22/22 15:43 | 07/22/22 23:22 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U *+ F1 F2 | 50.0 | | mg/Kg | | 07/22/22 15:43 | 07/22/22 23:22 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 07/22/22 15:43 | 07/22/22 23:22 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *78* | | *70 - 130* | *07/22/22 15:43* | *07/22/22 23:22* | *1* |
| *o-Terphenyl* | *90* | | *70 - 130* | *07/22/22 15:43* | *07/22/22 23:22* | *1* |

### Method: 300.0 - Anions, Ion Chromatography - Soluble

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **108** | | 5.01 | | mg/Kg | | | 07/23/22 04:39 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2614-1
SDG: 03E1558071

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | BFB1 | DFBZ1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 880-17264-A-22-C MS | Matrix Spike | 100 | 88 |
| 880-17264-A-22-D MSD | Matrix Spike Duplicate | 101 | 96 |
| 890-2614-1 | SS4 | 109 | 90 |
| LCS 880-30478/1-A | Lab Control Sample | 106 | 98 |
| LCSD 880-30478/2-A | Lab Control Sample Dup | 105 | 97 |
| MB 880-30478/5-A | Method Blank | 98 | 86 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-2614-1 | SS4 | 78 | 90 |
| 890-2614-1 MS | SS4 | 21 S1- | 17 S1- |
| 890-2614-1 MSD | SS4 | 11 S1- | 6 S1- |
| LCS 880-30432/2-A | Lab Control Sample | 151 S1+ | 179 S1+ |
| LCSD 880-30432/3-A | Lab Control Sample Dup | 123 | 155 S1+ |
| MB 880-30432/1-A | Method Blank | 137 S1+ | 182 S1+ |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2614-1
SDG: 03E1558071

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

### Lab Sample ID: MB 880-30478/5-A
### Matrix: Solid
### Analysis Batch: 30484

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30478

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* | *07/23/22 18:30* | *07/24/22 14:29* | *1* |
| *1,4-Difluorobenzene (Surr)* | *86* | | *70 - 130* | *07/23/22 18:30* | *07/24/22 14:29* | *1* |

### Lab Sample ID: LCS 880-30478/1-A
### Matrix: Solid
### Analysis Batch: 30484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30478

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1098 | | mg/Kg | | 110 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.1086 | | mg/Kg | | 109 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.1126 | | mg/Kg | | 113 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2291 | | mg/Kg | | 115 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.1252 | | mg/Kg | | 125 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *98* | | *70 - 130* |

### Lab Sample ID: LCSD 880-30478/2-A
### Matrix: Solid
### Analysis Batch: 30484

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30478

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1024 | | mg/Kg | | 102 | 70 - 130 | 7 | 35 |
| Toluene | | | 0.100 | 0.1005 | | mg/Kg | | 101 | 70 - 130 | 8 | 35 |
| Ethylbenzene | | | 0.100 | 0.1036 | | mg/Kg | | 104 | 70 - 130 | 8 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2101 | | mg/Kg | | 105 | 70 - 130 | 9 | 35 |
| o-Xylene | | | 0.100 | 0.1148 | | mg/Kg | | 115 | 70 - 130 | 9 | 35 |

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

### Lab Sample ID: 880-17264-A-22-C MS
### Matrix: Solid
### Analysis Batch: 30484

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30478

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.100 | 0.07613 | | mg/Kg | | 76 | 70 - 130 | | |
| Toluene | <0.00200 | U | 0.100 | 0.08980 | | mg/Kg | | 89 | 70 - 130 | | |

# QC Sample Results

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2614-1
SDG: 03E1558071

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

**Lab Sample ID: 880-17264-A-22-C MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 30484** — **Prep Batch: 30478**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00200 | U | 0.100 | 0.09841 | | mg/Kg | | 98 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.201 | 0.1966 | | mg/Kg | | 98 | 70 - 130 |
| o-Xylene | <0.00200 | U | 0.100 | 0.1051 | | mg/Kg | | 105 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *100* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *88* | | *70 - 130* |

**Lab Sample ID: 880-17264-A-22-D MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 30484** — **Prep Batch: 30478**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.0998 | 0.09261 | | mg/Kg | | 93 | 70 - 130 | 20 | 35 |
| Toluene | <0.00200 | U | 0.0998 | 0.09185 | | mg/Kg | | 92 | 70 - 130 | 2 | 35 |
| Ethylbenzene | <0.00200 | U | 0.0998 | 0.09454 | | mg/Kg | | 95 | 70 - 130 | 4 | 35 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.200 | 0.1915 | | mg/Kg | | 96 | 70 - 130 | 3 | 35 |
| o-Xylene | <0.00200 | U | 0.0998 | 0.1034 | | mg/Kg | | 104 | 70 - 130 | 2 | 35 |

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

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

**Lab Sample ID: MB 880-30432/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 30368** — **Prep Batch: 30432**

| 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 | | 07/22/22 15:43 | 07/22/22 21:35 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 07/22/22 15:43 | 07/22/22 21:35 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 07/22/22 15:43 | 07/22/22 21:35 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *137* | *S1+* | *70 - 130* | *07/22/22 15:43* | *07/22/22 21:35* | *1* |
| *o-Terphenyl* | *182* | *S1+* | *70 - 130* | *07/22/22 15:43* | *07/22/22 21:35* | *1* |

**Lab Sample ID: LCS 880-30432/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 30368** — **Prep Batch: 30432**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 952.7 | | mg/Kg | | 95 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1360 | *+ | mg/Kg | | 136 | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2614-1
SDG: 03E1558071

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

**Lab Sample ID: LCS 880-30432/2-A**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 151 | S1+ | 70 - 130 |
| o-Terphenyl | 179 | S1+ | 70 - 130 |

**Lab Sample ID: LCSD 880-30432/3-A**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 812.0 | | mg/Kg | | 81 | 70 - 130 | 16 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1147 | | mg/Kg | | 115 | 70 - 130 | 17 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 123 | | 70 - 130 |
| o-Terphenyl | 155 | S1+ | 70 - 130 |

**Lab Sample ID: 890-2614-1 MS**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: SS4**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U F1 F2 | 1000 | 286.3 | F1 | mg/Kg | | 26 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <50.0 | U *+ F1 F2 | 1000 | 173.7 | F1 | mg/Kg | | 17 | 70 - 130 | | |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 21 | S1- | 70 - 130 |
| o-Terphenyl | 17 | S1- | 70 - 130 |

**Lab Sample ID: 890-2614-1 MSD**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: SS4**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U F1 F2 | 999 | 212.0 | F1 F2 | mg/Kg | | 19 | 70 - 130 | 30 | 20 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U *+ F1 F2 | 999 | 74.76 | F1 F2 | mg/Kg | | 7 | 70 - 130 | 80 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 11 | S1- | 70 - 130 |
| o-Terphenyl | 6 | S1- | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2614-1
SDG: 03E1558071

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-30244/1-A**
**Matrix: Solid**
**Analysis Batch: 30412**

**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 | | | 07/23/22 02:12 | 1 |

**Lab Sample ID: LCS 880-30244/2-A**
**Matrix: Solid**
**Analysis Batch: 30412**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 261.0 | | mg/Kg | | 104 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-30244/3-A**
**Matrix: Solid**
**Analysis Batch: 30412**

**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 | 262.5 | | mg/Kg | | 105 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 890-2592-A-1-C MS**
**Matrix: Solid**
**Analysis Batch: 30412**

**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 | 5.66 | | 252 | 276.9 | | mg/Kg | | 108 | 90 - 110 | | |

**Lab Sample ID: 890-2592-A-1-D MSD**
**Matrix: Solid**
**Analysis Batch: 30412**

**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 | 5.66 | | 252 | 277.2 | | mg/Kg | | 108 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2614-1
SDG: 03E1558071

## GC VOA

### Prep Batch: 30478

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2614-1 | SS4 | Total/NA | Solid | 5035 | |
| MB 880-30478/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-30478/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-30478/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 880-17264-A-22-C MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 880-17264-A-22-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 30484

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2614-1 | SS4 | Total/NA | Solid | 8021B | 30478 |
| MB 880-30478/5-A | Method Blank | Total/NA | Solid | 8021B | 30478 |
| LCS 880-30478/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 30478 |
| LCSD 880-30478/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 30478 |
| 880-17264-A-22-C MS | Matrix Spike | Total/NA | Solid | 8021B | 30478 |
| 880-17264-A-22-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 30478 |

### Analysis Batch: 30547

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2614-1 | SS4 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Analysis Batch: 30368

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2614-1 | SS4 | Total/NA | Solid | 8015B NM | 30432 |
| MB 880-30432/1-A | Method Blank | Total/NA | Solid | 8015B NM | 30432 |
| LCS 880-30432/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 30432 |
| LCSD 880-30432/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 30432 |
| 890-2614-1 MS | SS4 | Total/NA | Solid | 8015B NM | 30432 |
| 890-2614-1 MSD | SS4 | Total/NA | Solid | 8015B NM | 30432 |

### Prep Batch: 30432

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2614-1 | SS4 | Total/NA | Solid | 8015NM Prep | |
| MB 880-30432/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-30432/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-30432/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-2614-1 MS | SS4 | Total/NA | Solid | 8015NM Prep | |
| 890-2614-1 MSD | SS4 | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 30522

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2614-1 | SS4 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 30244

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2614-1 | SS4 | Soluble | Solid | DI Leach | |
| MB 880-30244/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-30244/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-30244/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |

# QC Association Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2614-1
SDG: 03E1558071

## HPLC/IC (Continued)

### Leach Batch: 30244 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2592-A-1-C MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-2592-A-1-D MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 30412

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2614-1 | SS4 | Soluble | Solid | 300.0 | 30244 |
| MB 880-30244/1-A | Method Blank | Soluble | Solid | 300.0 | 30244 |
| LCS 880-30244/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 30244 |
| LCSD 880-30244/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 30244 |
| 890-2592-A-1-C MS | Matrix Spike | Soluble | Solid | 300.0 | 30244 |
| 890-2592-A-1-D MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 30244 |

# Lab Chronicle

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2614-1
SDG: 03E1558071

## Client Sample ID: SS4

**Date Collected: 07/19/22 11:45**
**Date Received: 07/21/22 16:15**

## Lab Sample ID: 890-2614-1

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.03 g | 5 mL | 30478 | 07/23/22 18:30 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 30484 | 07/24/22 15:11 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 30547 | 07/25/22 10:43 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 30522 | 07/25/22 09:39 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 30432 | 07/22/22 15:43 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 30368 | 07/22/22 23:22 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 4.99 g | 50 mL | 30244 | 07/22/22 13:36 | SMC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 30412 | 07/23/22 04:39 | CH | XEN MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2614-1
SDG: 03E1558071

## Laboratory: Eurofins Midland

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Texas | NELAP | T104704400-22-24 | 06-30-23 |

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

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

# Method Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2614-1
SDG: 03E1558071

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

**Protocol References:**

ASTM = ASTM International
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2614-1
SDG: 03E1558071

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-2614-1 | SS4 | Solid | 07/19/22 11:45 | 07/21/22 16:15 | 6' |

Page 64 of 132

7/25/2022

eurofins | Environment Testing Xenco

# Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Kalei Jennings | Bill to: (if different) | Garrett Green |
| Company Name: | Ensolum | Company Name: | XTO Energy |
| Address: | 3122 National Parks | Address: | 3104 E Greene St |
| City, State ZIP: | Carlsbad NM 88220 | City, State ZIP: | Carlsbad NM 88220 |
| Phone: | 817-685-2503 | Email: | |

**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: | Coral Canyon 16 | Turn Around | |
| Project Number: | 03E155807 | ☐ Routine ☑ Rush | |
| Project Location: | Eddy County | Due Date: | 3 Day |
| Sampler's Name: | CR | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | Yes (No) | Wet Ice: | Yes (No) | |
| Samples Received Intact: | (Yes) No | Thermometer ID: | TNM-007 | |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes No (N/A) | Temperature Reading: | 4.2 | |
| Total Containers: | | Corrected Temperature: | 4.0 | |

ANALYSIS REQUEST

Pres. Code

Parameters

CHL BTEX TPH

890-2614 Chain of Custody

**Preservative Codes**

None: NO — DI Water: $H_2O$
Cool: Cool — MeOH: Me
HCL: HC — $HNO_3$: HN
$H_2SO_4$: $H_2$ — NaOH: Na
$H_3PO_4$: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: NaSO$_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Sample Comments |
|---|---|---|---|---|---|---|---|
| SS4 | S | 7-19 | 1145 | 0.5' | G | 1 | Fac ID NAIP 221394140 CC 106 TX 100 |

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

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

| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| 1 | | | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

Page 17 of 19

Received by OCD: 8/3/2022 1:25:56 PM

Released to Imaging: 8/29/2022 11:52:44 AM

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2614-1
SDG Number: 03E1558071

**Login Number: 2614**
**List Number: 1**
**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2614-1
SDG Number: 03E1558071

**Login Number: 2614**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 07/22/22 12:56 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 | |

eurofins | Environment Testing America

# ANALYTICAL REPORT

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

Laboratory Job ID: 890-2615-1
Laboratory Sample Delivery Group: Eddy County
Client Project/Site: Corral Canyon 16

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

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*7/25/2022 10:34:04 AM*

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

LINKS
Review your project results through my EOL
Have a Question? Ask The Expert
Visit us at: www.eurofinsus.com/Env

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

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

Client: Ensolum
Project/Site: Corral Canyon 16

Laboratory Job ID: 890-2615-1
SDG: Eddy County

# Table of Contents


Cover Page . . . . . 1
Table of Contents . . . . . 2
Definitions/Glossary . . . . . 3
Case Narrative . . . . . 4
Client Sample Results . . . . . 5
Surrogate Summary . . . . . 6
QC Sample Results . . . . . 7
QC Association Summary . . . . . 11
Lab Chronicle . . . . . 13
Certification Summary . . . . . 14
Method Summary . . . . . 15
Sample Summary . . . . . 16
Chain of Custody . . . . . 17
Receipt Checklists . . . . . 19

# Definitions/Glossary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2615-1
SDG: Eddy County

## 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, high biased. |
| F1 | MS and/or MSD recovery exceeds control limits. |
| F2 | MS/MSD RPD exceeds control limits |
| S1- | Surrogate recovery exceeds control limits, low biased. |
| S1+ | Surrogate recovery exceeds control limits, high biased. |
| U | Indicates the analyte was analyzed for but not detected. |

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2615-1
SDG: Eddy County

## Job ID: 890-2615-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-2615-1**

**Receipt**
The sample was received on 7/21/2022 3:33 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 4.0°C

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

**GC Semi VOA**
Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-30432 and analytical batch 880-30368 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.

Method 8015MOD_NM: The diesel range was biased high in the LCS, however since only an LCS or LCSD are required the data was qualified and reported. (LCS 880-30432/2-A)

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: Corral Canyon 16

Job ID: 890-2615-1
SDG: Eddy County

## Client Sample ID: SS1

**Date Collected: 07/19/22 11:00**
**Date Received: 07/21/22 15:33**
**Sample Depth: 0.5'**

## Lab Sample ID: 890-2615-1

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.00201 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:32 | 1 |
| Toluene | <0.00201 | U | 0.00201 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:32 | 1 |
| Ethylbenzene | <0.00201 | U | 0.00201 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:32 | 1 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.00402 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:32 | 1 |
| o-Xylene | <0.00201 | U | 0.00201 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:32 | 1 |
| Xylenes, Total | <0.00402 | U | 0.00402 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:32 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *90* | | *70 - 130* | *07/23/22 18:30* | *07/24/22 15:32* | *1* |
| *1,4-Difluorobenzene (Surr)* | *81* | | *70 - 130* | *07/23/22 18:30* | *07/24/22 15:32* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00402 | U | 0.00402 | | mg/Kg | | | 07/25/22 10:43 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 07/25/22 09:39 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 07/22/22 15:43 | 07/23/22 00:27 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U *+ | 49.9 | | mg/Kg | | 07/22/22 15:43 | 07/23/22 00:27 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 07/22/22 15:43 | 07/23/22 00:27 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *1* | *S1-* | *70 - 130* | *07/22/22 15:43* | *07/23/22 00:27* | *1* |
| *o-Terphenyl* | *0.2* | *S1-* | *70 - 130* | *07/22/22 15:43* | *07/23/22 00:27* | *1* |

### Method: 300.0 - Anions, Ion Chromatography - Soluble

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **95.9** | | 5.03 | | mg/Kg | | | 07/23/22 04:48 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2615-1
SDG: Eddy County

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

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

| Lab Sample ID | Client Sample ID | Percent Surrogate Recovery (Acceptance Limits) BFB1 (70-130) | DFBZ1 (70-130) |
|---|---|---|---|
| 880-17264-A-22-C MS | Matrix Spike | 100 | 88 |
| 880-17264-A-22-D MSD | Matrix Spike Duplicate | 101 | 96 |
| 890-2615-1 | SS1 | 90 | 81 |
| LCS 880-30478/1-A | Lab Control Sample | 106 | 98 |
| LCSD 880-30478/2-A | Lab Control Sample Dup | 105 | 97 |
| MB 880-30478/5-A | Method Blank | 98 | 86 |

**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**

| Lab Sample ID | Client Sample ID | Percent Surrogate Recovery (Acceptance Limits) 1CO1 (70-130) | OTPH1 (70-130) |
|---|---|---|---|
| 890-2614-A-1-D MS | Matrix Spike | 21 S1- | 17 S1- |
| 890-2614-A-1-E MSD | Matrix Spike Duplicate | 11 S1- | 6 S1- |
| 890-2615-1 | SS1 | 1 S1- | 0.2 S1- |
| LCS 880-30432/2-A | Lab Control Sample | 151 S1+ | 179 S1+ |
| LCSD 880-30432/3-A | Lab Control Sample Dup | 123 | 155 S1+ |
| MB 880-30432/1-A | Method Blank | 137 S1+ | 182 S1+ |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2615-1
SDG: Eddy County

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

**Lab Sample ID: MB 880-30478/5-A**
**Matrix: Solid**
**Analysis Batch: 30484**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 30478**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* | *07/23/22 18:30* | *07/24/22 14:29* | *1* |
| *1,4-Difluorobenzene (Surr)* | *86* | | *70 - 130* | *07/23/22 18:30* | *07/24/22 14:29* | *1* |

**Lab Sample ID: LCS 880-30478/1-A**
**Matrix: Solid**
**Analysis Batch: 30484**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 30478**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1098 | | mg/Kg | | 110 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.1086 | | mg/Kg | | 109 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.1126 | | mg/Kg | | 113 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2291 | | mg/Kg | | 115 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.1252 | | mg/Kg | | 125 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *98* | | *70 - 130* |

**Lab Sample ID: LCSD 880-30478/2-A**
**Matrix: Solid**
**Analysis Batch: 30484**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 30478**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1024 | | mg/Kg | | 102 | 70 - 130 | 7 | 35 |
| Toluene | | | 0.100 | 0.1005 | | mg/Kg | | 101 | 70 - 130 | 8 | 35 |
| Ethylbenzene | | | 0.100 | 0.1036 | | mg/Kg | | 104 | 70 - 130 | 8 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2101 | | mg/Kg | | 105 | 70 - 130 | 9 | 35 |
| o-Xylene | | | 0.100 | 0.1148 | | mg/Kg | | 115 | 70 - 130 | 9 | 35 |

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

**Lab Sample ID: 880-17264-A-22-C MS**
**Matrix: Solid**
**Analysis Batch: 30484**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 30478**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.100 | 0.07613 | | mg/Kg | | 76 | 70 - 130 | | |
| Toluene | <0.00200 | U | 0.100 | 0.08980 | | mg/Kg | | 89 | 70 - 130 | | |

# QC Sample Results

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2615-1
SDG: Eddy County

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

**Lab Sample ID: 880-17264-A-22-C MS**
**Matrix: Solid**
**Analysis Batch: 30484**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 30478**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00200 | U | 0.100 | 0.09841 | | mg/Kg | | 98 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.201 | 0.1966 | | mg/Kg | | 98 | 70 - 130 |
| o-Xylene | <0.00200 | U | 0.100 | 0.1051 | | mg/Kg | | 105 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *100* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *88* | | *70 - 130* |

**Lab Sample ID: 880-17264-A-22-D MSD**
**Matrix: Solid**
**Analysis Batch: 30484**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 30478**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.0998 | 0.09261 | | mg/Kg | | 93 | 70 - 130 | 20 | 35 |
| Toluene | <0.00200 | U | 0.0998 | 0.09185 | | mg/Kg | | 92 | 70 - 130 | 2 | 35 |
| Ethylbenzene | <0.00200 | U | 0.0998 | 0.09454 | | mg/Kg | | 95 | 70 - 130 | 4 | 35 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.200 | 0.1915 | | mg/Kg | | 96 | 70 - 130 | 3 | 35 |
| o-Xylene | <0.00200 | U | 0.0998 | 0.1034 | | mg/Kg | | 104 | 70 - 130 | 2 | 35 |

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

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

**Lab Sample ID: MB 880-30432/1-A**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| 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 | | 07/22/22 15:43 | 07/22/22 21:35 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 07/22/22 15:43 | 07/22/22 21:35 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 07/22/22 15:43 | 07/22/22 21:35 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *137* | *S1+* | *70 - 130* | *07/22/22 15:43* | *07/22/22 21:35* | *1* |
| *o-Terphenyl* | *182* | *S1+* | *70 - 130* | *07/22/22 15:43* | *07/22/22 21:35* | *1* |

**Lab Sample ID: LCS 880-30432/2-A**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 952.7 | | mg/Kg | | 95 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1360 | *+ | mg/Kg | | 136 | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2615-1
SDG: Eddy County

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

**Lab Sample ID: LCS 880-30432/2-A**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 151 | S1+ | 70 - 130 |
| o-Terphenyl | 179 | S1+ | 70 - 130 |

**Lab Sample ID: LCSD 880-30432/3-A**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 812.0 | | mg/Kg | | 81 | 70 - 130 | 16 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1147 | | mg/Kg | | 115 | 70 - 130 | 17 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 123 | | 70 - 130 |
| o-Terphenyl | 155 | S1+ | 70 - 130 |

**Lab Sample ID: 890-2614-A-1-D MS**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U F1 F2 | 1000 | 286.3 | F1 | mg/Kg | | 26 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <50.0 | U *+ F1 F2 | 1000 | 173.7 | F1 | mg/Kg | | 17 | 70 - 130 | | |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 21 | S1- | 70 - 130 |
| o-Terphenyl | 17 | S1- | 70 - 130 |

**Lab Sample ID: 890-2614-A-1-E MSD**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U F1 F2 | 999 | 212.0 | F1 F2 | mg/Kg | | 19 | 70 - 130 | 30 | 20 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U *+ F1 F2 | 999 | 74.76 | F1 F2 | mg/Kg | | 7 | 70 - 130 | 80 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 11 | S1- | 70 - 130 |
| o-Terphenyl | 6 | S1- | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2615-1
SDG: Eddy County

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-30244/1-A**
**Matrix: Solid**
**Analysis Batch: 30412**

**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 | | | 07/23/22 02:12 | 1 |

**Lab Sample ID: LCS 880-30244/2-A**
**Matrix: Solid**
**Analysis Batch: 30412**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 261.0 | | mg/Kg | | 104 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-30244/3-A**
**Matrix: Solid**
**Analysis Batch: 30412**

**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 | 262.5 | | mg/Kg | | 105 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 890-2615-1 MS**
**Matrix: Solid**
**Analysis Batch: 30412**

**Client Sample ID: SS1**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 95.9 | | 252 | 330.4 | | mg/Kg | | 93 | 90 - 110 | | |

**Lab Sample ID: 890-2615-1 MSD**
**Matrix: Solid**
**Analysis Batch: 30412**

**Client Sample ID: SS1**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 95.9 | | 249 | 327.2 | | mg/Kg | | 93 | 90 - 110 | 1 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2615-1
SDG: Eddy County

## GC VOA

### Prep Batch: 30478

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2615-1 | SS1 | Total/NA | Solid | 5035 | |
| MB 880-30478/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-30478/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-30478/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 880-17264-A-22-C MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 880-17264-A-22-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 30484

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2615-1 | SS1 | Total/NA | Solid | 8021B | 30478 |
| MB 880-30478/5-A | Method Blank | Total/NA | Solid | 8021B | 30478 |
| LCS 880-30478/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 30478 |
| LCSD 880-30478/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 30478 |
| 880-17264-A-22-C MS | Matrix Spike | Total/NA | Solid | 8021B | 30478 |
| 880-17264-A-22-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 30478 |

### Analysis Batch: 30548

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2615-1 | SS1 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Analysis Batch: 30368

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2615-1 | SS1 | Total/NA | Solid | 8015B NM | 30432 |
| MB 880-30432/1-A | Method Blank | Total/NA | Solid | 8015B NM | 30432 |
| LCS 880-30432/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 30432 |
| LCSD 880-30432/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 30432 |
| 890-2614-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015B NM | 30432 |
| 890-2614-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 30432 |

### Prep Batch: 30432

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2615-1 | SS1 | Total/NA | Solid | 8015NM Prep | |
| MB 880-30432/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-30432/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-30432/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-2614-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-2614-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 30523

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2615-1 | SS1 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 30244

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2615-1 | SS1 | Soluble | Solid | DI Leach | |
| MB 880-30244/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-30244/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-30244/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |

# QC Association Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2615-1
SDG: Eddy County

## HPLC/IC (Continued)

### Leach Batch: 30244 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2615-1 MS | SS1 | Soluble | Solid | DI Leach | |
| 890-2615-1 MSD | SS1 | Soluble | Solid | DI Leach | |

### Analysis Batch: 30412

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2615-1 | SS1 | Soluble | Solid | 300.0 | 30244 |
| MB 880-30244/1-A | Method Blank | Soluble | Solid | 300.0 | 30244 |
| LCS 880-30244/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 30244 |
| LCSD 880-30244/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 30244 |
| 890-2615-1 MS | SS1 | Soluble | Solid | 300.0 | 30244 |
| 890-2615-1 MSD | SS1 | Soluble | Solid | 300.0 | 30244 |

# Lab Chronicle

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2615-1
SDG: Eddy County

## Client Sample ID: SS1

**Date Collected: 07/19/22 11:00**
**Date Received: 07/21/22 15:33**

## Lab Sample ID: 890-2615-1

**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 | 30478 | 07/23/22 18:30 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 30484 | 07/24/22 15:32 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 30548 | 07/25/22 10:43 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 30523 | 07/25/22 09:39 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 30432 | 07/22/22 15:43 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 30368 | 07/23/22 00:27 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 4.97 g | 50 mL | 30244 | 07/22/22 13:36 | SMC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 0 mL | 1.0 mL | 30412 | 07/23/22 04:48 | CH | XEN MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2615-1
SDG: Eddy County

## Laboratory: Eurofins Midland

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Texas | NELAP | T104704400-22-24 | 06-30-23 |

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

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

# Method Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2615-1
SDG: Eddy County

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

**Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2615-1
SDG: Eddy County

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-2615-1 | SS1 | Solid | 07/19/22 11:00 | 07/21/22 15:33 | 0.5' |

Page 83 of 132

eurofins | Environment Testing Xenco

# Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Kalei Jennings | Bill to: (if different) | Garrett Green |
| Company Name: | Ensolum | Company Name: | XTO Energy |
| Address: | 3122 National Parks | Address: | 3104 E Greene St |
| City, State ZIP: | Carlsbad NM 88220 | City, State ZIP: | Carlsbad NM 88220 |
| Phone: | 817-683-2503 | Email: | garrett.green@exxonmobile.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: | Corral Canyon 16 | Turn Around | |
| Project Number: | 03E1558071 | ☐ Routine ☑ Rush | |
| Project Location: | Eddy County | Due Date: | 3 Day |
| Sampler's Name: | CB | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No |
| Samples Received Intact: | Yes No | Thermometer ID: | TNM-007 |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No N/A | Temperature Reading: | 4.2 |
| Total Containers: | | Corrected Temperature: | 4.0 |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code | Parameters: CHL | BTEX | TPH |
|---|---|---|---|---|---|---|---|---|---|---|
| SS1 | S | 7-19 | 1100 | .5ft | G | 1 | | ✓ | ✓ | ✓ |

890-2615 Chain of Custody

**Preservative Codes**

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

**Sample Comments**

ICACID
NAPP22139414O4
CL
10677310O1

CB

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

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

| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| 1 | Amanda Stuffle | 7/21/22 1533 | | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

Received by OCD: 8/3/2022 1:25:56 PM
Released to Imaging: 8/29/2022 11:52:44 AM

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2615-1
SDG Number: Eddy County

**Login Number: 2615**
**List Number: 1**
**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2615-1
SDG Number: Eddy County

**Login Number: 2615**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 07/22/22 12:56 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 | |

eurofins | Environment Testing America

# ANALYTICAL REPORT

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

Laboratory Job ID: 890-2616-1
Laboratory Sample Delivery Group: Eddy County
Client Project/Site: Corral Canyon 16

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

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*7/25/2022 10:34:23 AM*

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

LINKS
Review your project results through my EOL
Have a Question? Ask The Expert
Visit us at: www.eurofinsus.com/Env

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

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

Client: Ensolum
Project/Site: Corral Canyon 16

Laboratory Job ID: 890-2616-1
SDG: Eddy County

# Table of Contents


Cover Page . . . . . 1
Table of Contents . . . . . 2
Definitions/Glossary . . . . . 3
Case Narrative . . . . . 4
Client Sample Results . . . . . 5
Surrogate Summary . . . . . 6
QC Sample Results . . . . . 7
QC Association Summary . . . . . 11
Lab Chronicle . . . . . 13
Certification Summary . . . . . 14
Method Summary . . . . . 15
Sample Summary . . . . . 16
Chain of Custody . . . . . 17
Receipt Checklists . . . . . 19

# Definitions/Glossary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2616-1
SDG: Eddy County

## 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, high biased. |
| F1 | MS and/or MSD recovery exceeds control limits. |
| F2 | MS/MSD RPD exceeds control limits |
| S1- | Surrogate recovery exceeds control limits, low biased. |
| S1+ | Surrogate recovery exceeds control limits, high biased. |
| U | Indicates the analyte was analyzed for but not detected. |

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2616-1
SDG: Eddy County

## Job ID: 890-2616-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-2616-1**

**Receipt**
The sample was received on 7/21/2022 3:33 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 4.0°C

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

**GC Semi VOA**
Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-30432 and analytical batch 880-30368 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.

Method 8015MOD_NM: The diesel range was biased high in the LCS, however since only an LCS or LCSD are required the data was qualified and reported. (LCS 880-30432/2-A)

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: Corral Canyon 16

Job ID: 890-2616-1
SDG: Eddy County

## Client Sample ID: SS2

**Date Collected: 07/19/22 11:15**
**Date Received: 07/21/22 15:33**
**Sample Depth: 6'**

## Lab Sample ID: 890-2616-1

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:52 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:52 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:52 | 1 |
| m-Xylene & p-Xylene | <0.00401 | U | 0.00401 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:52 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:52 | 1 |
| Xylenes, Total | <0.00401 | U | 0.00401 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 15:52 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *91* | | *70 - 130* | *07/23/22 18:30* | *07/24/22 15:52* | *1* |
| *1,4-Difluorobenzene (Surr)* | *93* | | *70 - 130* | *07/23/22 18:30* | *07/24/22 15:52* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00401 | U | 0.00401 | | mg/Kg | | | 07/25/22 10:43 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 07/25/22 09:39 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 07/22/22 15:43 | 07/23/22 00:48 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U *+ | 50.0 | | mg/Kg | | 07/22/22 15:43 | 07/23/22 00:48 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 07/22/22 15:43 | 07/23/22 00:48 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *1* | *S1-* | *70 - 130* | *07/22/22 15:43* | *07/23/22 00:48* | *1* |
| *o-Terphenyl* | *0.1* | *S1-* | *70 - 130* | *07/22/22 15:43* | *07/23/22 00:48* | *1* |

### Method: 300.0 - Anions, Ion Chromatography - Soluble

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **26.1** | | 4.96 | | mg/Kg | | | 07/23/22 05:16 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2616-1
SDG: Eddy County

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | BFB1 | DFBZ1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 880-17264-A-22-C MS | Matrix Spike | 100 | 88 |
| 880-17264-A-22-D MSD | Matrix Spike Duplicate | 101 | 96 |
| 890-2616-1 | SS2 | 91 | 93 |
| LCS 880-30478/1-A | Lab Control Sample | 106 | 98 |
| LCSD 880-30478/2-A | Lab Control Sample Dup | 105 | 97 |
| MB 880-30478/5-A | Method Blank | 98 | 86 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-2614-A-1-D MS | Matrix Spike | 21 S1- | 17 S1- |
| 890-2614-A-1-E MSD | Matrix Spike Duplicate | 11 S1- | 6 S1- |
| 890-2616-1 | SS2 | 1 S1- | 0.1 S1- |
| LCS 880-30432/2-A | Lab Control Sample | 151 S1+ | 179 S1+ |
| LCSD 880-30432/3-A | Lab Control Sample Dup | 123 | 155 S1+ |
| MB 880-30432/1-A | Method Blank | 137 S1+ | 182 S1+ |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2616-1
SDG: Eddy County

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

**Lab Sample ID: MB 880-30478/5-A**
**Matrix: Solid**
**Analysis Batch: 30484**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 30478**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 07/23/22 18:30 | 07/24/22 14:29 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* | *07/23/22 18:30* | *07/24/22 14:29* | *1* |
| *1,4-Difluorobenzene (Surr)* | *86* | | *70 - 130* | *07/23/22 18:30* | *07/24/22 14:29* | *1* |

**Lab Sample ID: LCS 880-30478/1-A**
**Matrix: Solid**
**Analysis Batch: 30484**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 30478**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1098 | | mg/Kg | | 110 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.1086 | | mg/Kg | | 109 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.1126 | | mg/Kg | | 113 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2291 | | mg/Kg | | 115 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.1252 | | mg/Kg | | 125 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *98* | | *70 - 130* |

**Lab Sample ID: LCSD 880-30478/2-A**
**Matrix: Solid**
**Analysis Batch: 30484**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 30478**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1024 | | mg/Kg | | 102 | 70 - 130 | 7 | 35 |
| Toluene | | | 0.100 | 0.1005 | | mg/Kg | | 101 | 70 - 130 | 8 | 35 |
| Ethylbenzene | | | 0.100 | 0.1036 | | mg/Kg | | 104 | 70 - 130 | 8 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2101 | | mg/Kg | | 105 | 70 - 130 | 9 | 35 |
| o-Xylene | | | 0.100 | 0.1148 | | mg/Kg | | 115 | 70 - 130 | 9 | 35 |

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

**Lab Sample ID: 880-17264-A-22-C MS**
**Matrix: Solid**
**Analysis Batch: 30484**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 30478**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.100 | 0.07613 | | mg/Kg | | 76 | 70 - 130 | | |
| Toluene | <0.00200 | U | 0.100 | 0.08980 | | mg/Kg | | 89 | 70 - 130 | | |

# QC Sample Results

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2616-1
SDG: Eddy County

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

**Lab Sample ID: 880-17264-A-22-C MS**
**Matrix: Solid**
**Analysis Batch: 30484**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 30478**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00200 | U | 0.100 | 0.09841 | | mg/Kg | | 98 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.201 | 0.1966 | | mg/Kg | | 98 | 70 - 130 |
| o-Xylene | <0.00200 | U | 0.100 | 0.1051 | | mg/Kg | | 105 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *100* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *88* | | *70 - 130* |

**Lab Sample ID: 880-17264-A-22-D MSD**
**Matrix: Solid**
**Analysis Batch: 30484**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 30478**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.0998 | 0.09261 | | mg/Kg | | 93 | 70 - 130 | 20 | 35 |
| Toluene | <0.00200 | U | 0.0998 | 0.09185 | | mg/Kg | | 92 | 70 - 130 | 2 | 35 |
| Ethylbenzene | <0.00200 | U | 0.0998 | 0.09454 | | mg/Kg | | 95 | 70 - 130 | 4 | 35 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.200 | 0.1915 | | mg/Kg | | 96 | 70 - 130 | 3 | 35 |
| o-Xylene | <0.00200 | U | 0.0998 | 0.1034 | | mg/Kg | | 104 | 70 - 130 | 2 | 35 |

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

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

**Lab Sample ID: MB 880-30432/1-A**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| 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 | | 07/22/22 15:43 | 07/22/22 21:35 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 07/22/22 15:43 | 07/22/22 21:35 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 07/22/22 15:43 | 07/22/22 21:35 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *137* | *S1+* | *70 - 130* | *07/22/22 15:43* | *07/22/22 21:35* | *1* |
| *o-Terphenyl* | *182* | *S1+* | *70 - 130* | *07/22/22 15:43* | *07/22/22 21:35* | *1* |

**Lab Sample ID: LCS 880-30432/2-A**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 952.7 | | mg/Kg | | 95 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1360 | *+ | mg/Kg | | 136 | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2616-1
SDG: Eddy County

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

**Lab Sample ID: LCS 880-30432/2-A**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 151 | S1+ | 70 - 130 |
| o-Terphenyl | 179 | S1+ | 70 - 130 |

**Lab Sample ID: LCSD 880-30432/3-A**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 812.0 | | mg/Kg | | 81 | 70 - 130 | 16 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1147 | | mg/Kg | | 115 | 70 - 130 | 17 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 123 | | 70 - 130 |
| o-Terphenyl | 155 | S1+ | 70 - 130 |

**Lab Sample ID: 890-2614-A-1-D MS**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U F1 F2 | 1000 | 286.3 | F1 | mg/Kg | | 26 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <50.0 | U *+ F1 F2 | 1000 | 173.7 | F1 | mg/Kg | | 17 | 70 - 130 | | |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 21 | S1- | 70 - 130 |
| o-Terphenyl | 17 | S1- | 70 - 130 |

**Lab Sample ID: 890-2614-A-1-E MSD**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U F1 F2 | 999 | 212.0 | F1 F2 | mg/Kg | | 19 | 70 - 130 | 30 | 20 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U *+ F1 F2 | 999 | 74.76 | F1 F2 | mg/Kg | | 7 | 70 - 130 | 80 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 11 | S1- | 70 - 130 |
| o-Terphenyl | 6 | S1- | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2616-1
SDG: Eddy County

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-30244/1-A**
**Matrix: Solid**
**Analysis Batch: 30412**

**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 | | | 07/23/22 02:12 | 1 |

**Lab Sample ID: LCS 880-30244/2-A**
**Matrix: Solid**
**Analysis Batch: 30412**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 261.0 | | mg/Kg | | 104 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-30244/3-A**
**Matrix: Solid**
**Analysis Batch: 30412**

**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 | 262.5 | | mg/Kg | | 105 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 890-2615-A-1-B MS**
**Matrix: Solid**
**Analysis Batch: 30412**

**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 | 95.9 | | 252 | 330.4 | | mg/Kg | | 93 | 90 - 110 | | |

**Lab Sample ID: 890-2615-A-1-C MSD**
**Matrix: Solid**
**Analysis Batch: 30412**

**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 | 95.9 | | 249 | 327.2 | | mg/Kg | | 93 | 90 - 110 | 1 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2616-1
SDG: Eddy County

## GC VOA

### Prep Batch: 30478

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2616-1 | SS2 | Total/NA | Solid | 5035 | |
| MB 880-30478/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-30478/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-30478/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 880-17264-A-22-C MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 880-17264-A-22-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 30484

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2616-1 | SS2 | Total/NA | Solid | 8021B | 30478 |
| MB 880-30478/5-A | Method Blank | Total/NA | Solid | 8021B | 30478 |
| LCS 880-30478/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 30478 |
| LCSD 880-30478/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 30478 |
| 880-17264-A-22-C MS | Matrix Spike | Total/NA | Solid | 8021B | 30478 |
| 880-17264-A-22-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 30478 |

### Analysis Batch: 30549

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2616-1 | SS2 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Analysis Batch: 30368

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2616-1 | SS2 | Total/NA | Solid | 8015B NM | 30432 |
| MB 880-30432/1-A | Method Blank | Total/NA | Solid | 8015B NM | 30432 |
| LCS 880-30432/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 30432 |
| LCSD 880-30432/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 30432 |
| 890-2614-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015B NM | 30432 |
| 890-2614-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 30432 |

### Prep Batch: 30432

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2616-1 | SS2 | Total/NA | Solid | 8015NM Prep | |
| MB 880-30432/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-30432/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-30432/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-2614-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-2614-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 30524

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2616-1 | SS2 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 30244

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2616-1 | SS2 | Soluble | Solid | DI Leach | |
| MB 880-30244/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-30244/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-30244/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |

# QC Association Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2616-1
SDG: Eddy County

## HPLC/IC (Continued)

### Leach Batch: 30244 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2615-A-1-B MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-2615-A-1-C MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 30412

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2616-1 | SS2 | Soluble | Solid | 300.0 | 30244 |
| MB 880-30244/1-A | Method Blank | Soluble | Solid | 300.0 | 30244 |
| LCS 880-30244/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 30244 |
| LCSD 880-30244/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 30244 |
| 890-2615-A-1-B MS | Matrix Spike | Soluble | Solid | 300.0 | 30244 |
| 890-2615-A-1-C MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 30244 |

# Lab Chronicle

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2616-1
SDG: Eddy County

## Client Sample ID: SS2

**Date Collected: 07/19/22 11:15**
**Date Received: 07/21/22 15:33**

## Lab Sample ID: 890-2616-1

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 4.99 g | 5 mL | 30478 | 07/23/22 18:30 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 30484 | 07/24/22 15:52 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 30549 | 07/25/22 10:43 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 30524 | 07/25/22 09:39 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 30432 | 07/22/22 15:43 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 30368 | 07/23/22 00:48 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 5.04 g | 50 mL | 30244 | 07/22/22 13:36 | SMC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 30412 | 07/23/22 05:16 | CH | XEN MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2616-1
SDG: Eddy County

## Laboratory: Eurofins Midland

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Texas | NELAP | T104704400-22-24 | 06-30-23 |

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

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

# Method Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2616-1
SDG: Eddy County

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

**Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2616-1
SDG: Eddy County

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-2616-1 | SS2 | Solid | 07/19/22 11:15 | 07/21/22 15:33 | 6' |

Released to Imaging: 8/29/2022 11:52:44 AM
Received by OCD: 8/3/2022 1:25:56 PM

eurofins | Environment Testing Xenco

# Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Kalei Jennings | Bill to: (if different) | Garrett Green |
| Company Name: | Ensolum | 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: | 817-685 2503 | Email: | garrett.green@exxonmobile.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: | Corral Canyon 16 | Turn Around | |
| Project Number: | 03E155807 | ☐ Routine ☑ Rush | |
| Project Location: | Eddy County | Due Date: | 3 Day |
| Sampler's Name: | CR | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | Yes (No) | Wet Ice: | (Yes) No | |
| Samples Received Intact: | (Yes) No | Thermometer ID: | TAM-007 | |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes No (N/A) | Temperature Reading: | 4.2 | |
| Total Containers: | | Corrected Temperature: | 4.0 | |

ANALYSIS REQUEST

Preservative Codes

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

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code | Parameters | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|
| SS2 | S | 7-19 | 1115 | 6in | G | 1 | | CHL / BTEX / TPH | Inc ID NAPP2213941404 |

890-2616 Chain of Custody

CR

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

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

| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| 1 | Amanda Stuf | 7/21/22 1633 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

Released to Imaging: 8/29/2022 11:52:44 AM
Received by OCD: 8/3/2022 1:25:56 PM

eurofins | Environment Testing Xenco

# Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Kalei Jennings | Bill to: (if different) | Garrett Green |
| Company Name: | Ensolum | 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: | 817-685-2503 | Email: | |

**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: | Corral Canyon 16 | Turn Around | |
| Project Number: | 03E1558071 | ☐ Routine ☑ Rush | |
| Project Location: | Eddy County | Due Date: | 3 Day |
| Sampler's Name: | CJ | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No |
| Samples Received Intact: | Yes No | Thermometer ID: | IR-507 |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No N/A | Temperature Reading: | 4.2 |
| Total Containers: | | Corrected Temperature: | 4.0 |

**ANALYSIS REQUEST**

CHL
BTEX
TPH

890-2617 Chain of Custody

**Preservative Codes**

None: NO | DI Water: $H_2O$
Cool: Cool | MeOH: Me
HCL: HC | $HNO_3$: HN
$H_2SO_4$: $H_2$ | NaOH: Na
$H_3PO_4$: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: NaSO$_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Sample Comments |
|---|---|---|---|---|---|---|---|
| SS3 | S | 7-19 | 1120 | 6in | G | 1 | Fac ID nAPP2213941404 |
| | | | | | | | CC 106 773,001 |

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

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

| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| 1 | | | 4 | | |
| 3 | | | 6 | | |
| 5 | | | | | |

Revised Date: 08/25/2020 Rev. 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2616-1
SDG Number: Eddy County

**Login Number: 2616**
**List Number: 1**
**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2616-1
SDG Number: Eddy County

**Login Number: 2616**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 07/22/22 12:56 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 | |

eurofins | Environment Testing America

# ANALYTICAL REPORT

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

Laboratory Job ID: 890-2617-1
Laboratory Sample Delivery Group: 03E1558071
Client Project/Site: Corral Canyon 16

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

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*7/26/2022 3:12:38 PM*

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

LINKS
Review your project results through my EOL
Have a Question? Ask The Expert
Visit us at: www.eurofinsus.com/Env

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

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

Client: Ensolum
Project/Site: Corral Canyon 16

Laboratory Job ID: 890-2617-1
SDG: 03E1558071

# Table of Contents


Cover Page . . . . . 1
Table of Contents . . . . . 2
Definitions/Glossary . . . . . 3
Case Narrative . . . . . 4
Client Sample Results . . . . . 5
Surrogate Summary . . . . . 6
QC Sample Results . . . . . 7
QC Association Summary . . . . . 11
Lab Chronicle . . . . . 13
Certification Summary . . . . . 14
Method Summary . . . . . 15
Sample Summary . . . . . 16
Chain of Custody . . . . . 17
Receipt Checklists . . . . . 18

# Definitions/Glossary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2617-1
SDG: 03E1558071

## 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, high biased. |
| F1 | MS and/or MSD recovery exceeds control limits. |
| F2 | MS/MSD RPD exceeds control limits |
| S1- | Surrogate recovery exceeds control limits, low biased. |
| S1+ | Surrogate recovery exceeds control limits, high biased. |
| U | Indicates the analyte was analyzed for but not detected. |

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2617-1
SDG: 03E1558071

## Job ID: 890-2617-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-2617-1**

**Receipt**
The sample was received on 7/21/2022 3:33 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 4.0°C

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

**GC Semi VOA**
Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-30432 and analytical batch 880-30368 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.

Method 8015MOD_NM: The diesel range was biased high in the LCS, however since only an LCS or LCSD are required the data was qualified and reported. (LCS 880-30432/2-A)

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: Corral Canyon 16

Job ID: 890-2617-1
SDG: 03E1558071

## Client Sample ID: SS3

**Date Collected: 07/19/22 11:30**
**Date Received: 07/21/22 15:33**
**Sample Depth: 6'**

## Lab Sample ID: 890-2617-1

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 14:05 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 14:05 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 14:05 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 14:05 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 14:05 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 14:05 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *103* | | *70 - 130* | *07/26/22 09:25* | *07/26/22 14:05* | *1* |
| *1,4-Difluorobenzene (Surr)* | *86* | | *70 - 130* | *07/26/22 09:25* | *07/26/22 14:05* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00399 | U | 0.00399 | | mg/Kg | | | 07/26/22 15:53 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 07/25/22 09:39 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 07/22/22 15:43 | 07/23/22 01:10 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U *+ | 50.0 | | mg/Kg | | 07/22/22 15:43 | 07/23/22 01:10 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 07/22/22 15:43 | 07/23/22 01:10 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *1* | *S1-* | *70 - 130* | *07/22/22 15:43* | *07/23/22 01:10* | *1* |
| *o-Terphenyl* | *0.2* | *S1-* | *70 - 130* | *07/22/22 15:43* | *07/23/22 01:10* | *1* |

### Method: 300.0 - Anions, Ion Chromatography - Soluble

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **254** | | 25.0 | | mg/Kg | | | 07/23/22 05:25 | 5 |

# Surrogate Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2617-1
SDG: 03E1558071

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BFB1 | DFBZ1 | | | | | | | | | | |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) | | | | | | | | | | |
| 880-17132-A-4-F MS | Matrix Spike | 103 | 95 | | | | | | | | | | |
| 880-17132-A-4-G MSD | Matrix Spike Duplicate | 110 | 96 | | | | | | | | | | |
| 890-2617-1 | SS3 | 103 | 86 | | | | | | | | | | |
| LCS 880-30664/1-A | Lab Control Sample | 105 | 95 | | | | | | | | | | |
| LCSD 880-30664/2-A | Lab Control Sample Dup | 108 | 98 | | | | | | | | | | |
| MB 880-30664/5-A | Method Blank | 100 | 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) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1CO1 | OTPH1 | | | | | | | | | | |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) | | | | | | | | | | |
| 890-2614-A-1-D MS | Matrix Spike | 21 S1- | 17 S1- | | | | | | | | | | |
| 890-2614-A-1-E MSD | Matrix Spike Duplicate | 11 S1- | 6 S1- | | | | | | | | | | |
| 890-2617-1 | SS3 | 1 S1- | 0.2 S1- | | | | | | | | | | |
| LCS 880-30432/2-A | Lab Control Sample | 151 S1+ | 179 S1+ | | | | | | | | | | |
| LCSD 880-30432/3-A | Lab Control Sample Dup | 123 | 155 S1+ | | | | | | | | | | |
| MB 880-30432/1-A | Method Blank | 137 S1+ | 182 S1+ | | | | | | | | | | |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2617-1
SDG: 03E1558071

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

**Lab Sample ID: MB 880-30664/5-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 30657** — **Prep Batch: 30664**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 12:01 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 12:01 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 12:01 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 12:01 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 12:01 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 12:01 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *100* | | *70 - 130* | *07/26/22 09:25* | *07/26/22 12:01* | *1* |
| *1,4-Difluorobenzene (Surr)* | *87* | | *70 - 130* | *07/26/22 09:25* | *07/26/22 12:01* | *1* |

**Lab Sample ID: LCS 880-30664/1-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 30657** — **Prep Batch: 30664**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09358 | | mg/Kg | | 94 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.09382 | | mg/Kg | | 94 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.09803 | | mg/Kg | | 98 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1983 | | mg/Kg | | 99 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.1073 | | mg/Kg | | 107 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *95* | | *70 - 130* |

**Lab Sample ID: LCSD 880-30664/2-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 30657** — **Prep Batch: 30664**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09765 | | mg/Kg | | 98 | 70 - 130 | 4 | 35 |
| Toluene | | | 0.100 | 0.09676 | | mg/Kg | | 97 | 70 - 130 | 3 | 35 |
| Ethylbenzene | | | 0.100 | 0.1016 | | mg/Kg | | 102 | 70 - 130 | 4 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2052 | | mg/Kg | | 103 | 70 - 130 | 3 | 35 |
| o-Xylene | | | 0.100 | 0.1117 | | mg/Kg | | 112 | 70 - 130 | 4 | 35 |

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

**Lab Sample ID: 880-17132-A-4-F MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 30657** — **Prep Batch: 30664**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.100 | 0.08215 | | mg/Kg | | 82 | 70 - 130 | | |
| Toluene | <0.00201 | U | 0.100 | 0.07761 | | mg/Kg | | 77 | 70 - 130 | | |

# QC Sample Results

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2617-1
SDG: 03E1558071

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

**Lab Sample ID: 880-17132-A-4-F MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 30657** — **Prep Batch: 30664**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00201 | U | 0.100 | 0.07428 | | mg/Kg | | 74 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.200 | 0.1476 | | mg/Kg | | 74 | 70 - 130 |
| o-Xylene | <0.00201 | U | 0.100 | 0.08083 | | mg/Kg | | 81 | 70 - 130 |

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

**Lab Sample ID: 880-17132-A-4-G MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 30657** — **Prep Batch: 30664**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.0998 | 0.08953 | | mg/Kg | | 90 | 70 - 130 | 9 | 35 |
| Toluene | <0.00201 | U | 0.0998 | 0.08606 | | mg/Kg | | 85 | 70 - 130 | 10 | 35 |
| Ethylbenzene | <0.00201 | U | 0.0998 | 0.08275 | | mg/Kg | | 83 | 70 - 130 | 11 | 35 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.200 | 0.1653 | | mg/Kg | | 83 | 70 - 130 | 11 | 35 |
| o-Xylene | <0.00201 | U | 0.0998 | 0.09102 | | mg/Kg | | 91 | 70 - 130 | 12 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *110* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *96* | | *70 - 130* |

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

**Lab Sample ID: MB 880-30432/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 30368** — **Prep Batch: 30432**

| 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 | | 07/22/22 15:43 | 07/22/22 21:35 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 07/22/22 15:43 | 07/22/22 21:35 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 07/22/22 15:43 | 07/22/22 21:35 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *137* | *S1+* | *70 - 130* | *07/22/22 15:43* | *07/22/22 21:35* | *1* |
| *o-Terphenyl* | *182* | *S1+* | *70 - 130* | *07/22/22 15:43* | *07/22/22 21:35* | *1* |

**Lab Sample ID: LCS 880-30432/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 30368** — **Prep Batch: 30432**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 952.7 | | mg/Kg | | 95 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1360 | *+ | mg/Kg | | 136 | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2617-1
SDG: 03E1558071

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

**Lab Sample ID: LCS 880-30432/2-A**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 151 | S1+ | 70 - 130 |
| o-Terphenyl | 179 | S1+ | 70 - 130 |

**Lab Sample ID: LCSD 880-30432/3-A**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 812.0 | | mg/Kg | | 81 | 70 - 130 | 16 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1147 | | mg/Kg | | 115 | 70 - 130 | 17 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 123 | | 70 - 130 |
| o-Terphenyl | 155 | S1+ | 70 - 130 |

**Lab Sample ID: 890-2614-A-1-D MS**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U F1 F2 | 1000 | 286.3 | F1 | mg/Kg | | 26 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <50.0 | U *+ F1 F2 | 1000 | 173.7 | F1 | mg/Kg | | 17 | 70 - 130 | | |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 21 | S1- | 70 - 130 |
| o-Terphenyl | 17 | S1- | 70 - 130 |

**Lab Sample ID: 890-2614-A-1-E MSD**
**Matrix: Solid**
**Analysis Batch: 30368**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 30432**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U F1 F2 | 999 | 212.0 | F1 F2 | mg/Kg | | 19 | 70 - 130 | 30 | 20 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U *+ F1 F2 | 999 | 74.76 | F1 F2 | mg/Kg | | 7 | 70 - 130 | 80 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 11 | S1- | 70 - 130 |
| o-Terphenyl | 6 | S1- | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2617-1
SDG: 03E1558071

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-30244/1-A**
**Matrix: Solid**
**Analysis Batch: 30412**

**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 | | | 07/23/22 02:12 | 1 |

**Lab Sample ID: LCS 880-30244/2-A**
**Matrix: Solid**
**Analysis Batch: 30412**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 261.0 | | mg/Kg | | 104 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-30244/3-A**
**Matrix: Solid**
**Analysis Batch: 30412**

**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 | 262.5 | | mg/Kg | | 105 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 890-2615-A-1-B MS**
**Matrix: Solid**
**Analysis Batch: 30412**

**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 | 95.9 | | 252 | 330.4 | | mg/Kg | | 93 | 90 - 110 | | |

**Lab Sample ID: 890-2615-A-1-C MSD**
**Matrix: Solid**
**Analysis Batch: 30412**

**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 | 95.9 | | 249 | 327.2 | | mg/Kg | | 93 | 90 - 110 | 1 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2617-1
SDG: 03E1558071

## GC VOA

### Analysis Batch: 30657

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2617-1 | SS3 | Total/NA | Solid | 8021B | 30664 |
| MB 880-30664/5-A | Method Blank | Total/NA | Solid | 8021B | 30664 |
| LCS 880-30664/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 30664 |
| LCSD 880-30664/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 30664 |
| 880-17132-A-4-F MS | Matrix Spike | Total/NA | Solid | 8021B | 30664 |
| 880-17132-A-4-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 30664 |

### Prep Batch: 30664

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2617-1 | SS3 | Total/NA | Solid | 5035 | |
| MB 880-30664/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-30664/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-30664/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 880-17132-A-4-F MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 880-17132-A-4-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 30718

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2617-1 | SS3 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Analysis Batch: 30368

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2617-1 | SS3 | Total/NA | Solid | 8015B NM | 30432 |
| MB 880-30432/1-A | Method Blank | Total/NA | Solid | 8015B NM | 30432 |
| LCS 880-30432/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 30432 |
| LCSD 880-30432/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 30432 |
| 890-2614-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015B NM | 30432 |
| 890-2614-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 30432 |

### Prep Batch: 30432

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2617-1 | SS3 | Total/NA | Solid | 8015NM Prep | |
| MB 880-30432/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-30432/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-30432/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-2614-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-2614-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 30525

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2617-1 | SS3 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 30244

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2617-1 | SS3 | Soluble | Solid | DI Leach | |
| MB 880-30244/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-30244/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-30244/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |

# QC Association Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2617-1
SDG: 03E1558071

## HPLC/IC (Continued)

### Leach Batch: 30244 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2615-A-1-B MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-2615-A-1-C MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 30412

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2617-1 | SS3 | Soluble | Solid | 300.0 | 30244 |
| MB 880-30244/1-A | Method Blank | Soluble | Solid | 300.0 | 30244 |
| LCS 880-30244/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 30244 |
| LCSD 880-30244/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 30244 |
| 890-2615-A-1-B MS | Matrix Spike | Soluble | Solid | 300.0 | 30244 |
| 890-2615-A-1-C MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 30244 |

# Lab Chronicle

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2617-1
SDG: 03E1558071

**Client Sample ID: SS3**
**Date Collected: 07/19/22 11:30**
**Date Received: 07/21/22 15:33**

**Lab Sample ID: 890-2617-1**
**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 | 30664 | 07/26/22 09:25 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 30657 | 07/26/22 14:05 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 30718 | 07/26/22 15:53 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 30525 | 07/25/22 09:39 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 30432 | 07/22/22 15:43 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 30368 | 07/23/22 01:10 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 5.01 g | 50 mL | 30244 | 07/22/22 13:36 | SMC | XEN MID |
| Soluble | Analysis | 300.0 | | 5 | | | 30412 | 07/23/22 05:25 | CH | XEN MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2617-1
SDG: 03E1558071

## Laboratory: Eurofins Midland

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Texas | NELAP | T104704400-22-24 | 06-30-23 |

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

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

# Method Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2617-1
SDG: 03E1558071

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

**Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: Corral Canyon 16

Job ID: 890-2617-1
SDG: 03E1558071

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-2617-1 | SS3 | Solid | 07/19/22 11:30 | 07/21/22 15:33 | 6' |

Released to Imaging: 8/29/2022 11:52:44 AM
Received by OCD: 8/3/2022 1:25:56 PM

eurofins | Environment Testing Xenco

# Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Kalei Jennings | Bill to: (if different) | Garrett Green |
| Company Name: | Ensolum | 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: | 817-685-2503 | Email: | |

**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: | Corral Canyon 16 | Turn Around | |
| Project Number: | 03E1558071 | ☐ Routine ☑ Rush | |
| Project Location: | Eddy County | Due Date: | 3 Day |
| Sampler's Name: | CB | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No |
| Samples Received Intact: | Yes No | Thermometer ID: | IR#4 |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No N/A | Temperature Reading: | 4.2 |
| Total Containers: | | Corrected Temperature: | 4.0 |

**ANALYSIS REQUEST**

Parameters: CHL, BTEX, TPH

890-2617 Chain of Custody

**Preservative Codes**

None: NO DI Water: $H_2O$
Cool: Cool MeOH: Me
HCL: HC $HNO_3$: HN
$H_2SO_4$: $H_2$ NaOH: Na
$H_3PO_4$: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: NaSO$_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code |
|---|---|---|---|---|---|---|---|
| SS3 | S | 7-19 | 1120 | 6in | G | 1 | |

**Sample Comments**

Fac ID
NAPP2213941404

CC
106 773,1001

CB

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

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

| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| 1 | | | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2617-1
SDG Number: 03E1558071

**Login Number: 2617**
**List Number: 1**
**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2617-1
SDG Number: 03E1558071

**Login Number: 2617**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 07/22/22 12:56 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 | |

ENSOLUM

# APPENDIX E

# NMOCD Notifications

**From:** Green, Garrett J
**To:** ocd.enviro@state.nm.us; Bratcher, Mike, EMNRD; Hamlet, Robert, EMNRD
**Cc:** Tacoma Morrissey; Ben Belill; Kalei Jennings; Aimee Cole
**Subject:** XTO - Sampling Notification (week of 7/4/22 - 7/8/22)
**Date:** Friday, July 1, 2022 10:59:20 AM

[ **EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the following sites the week of July 4, 2022.

Thursday, July 7th
- Corral Canyon 163H / nAPP2134755985, NAPP2200359627, NAPP2201252570
- PLU 442, 443 Battery / nAPP2214734717

Friday, July 8th
- Corral Canyon 163H / nAPP2134755985, NAPP2200359627, NAPP2201252570
- Corral Canyon 16 SWD / nAPP2213941404

Thank you,

**Garrett Green**
Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

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

## Collins, Melanie

**From:** Green, Garrett J
**Sent:** Friday, May 6, 2022 8:40 AM
**To:** ocd.enviro@state.nm.us; Bratcher, Mike, EMNRD; Hamlet, Robert, EMNRD; Jarrett, Ryan; Pennington, Shelby G; DelawareSpills /SM
**Subject:** XTO 24 hour notification - Corral Canyon 16 SWD

All,

This is notification of a release greater than 25 barrels that occurred yesterday at the Corral Canyon 16 SWD near the GPS coordinates given below. All of the fluids remained in containment and all standing fluids were recovered by vacuum truck. Details will be provided with a form C-141. Please contact us with any questions or concerns.

GPS: 32.13537,-103.99388

Thank you,

**Garrett Green**
Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

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

## Green, Garrett J

**From:** Green, Garrett J
**Sent:** Monday, May 9, 2022 2:15 PM
**To:** 'ocd.enviro@state.nm.us'; 'Bratcher, Mike, EMNRD'; 'Hamlet, Robert, EMNRD'
**Cc:** DelawareSpills /SM
**Subject:** XTO 48 Hour Liner Inspection - Corral Canyon 16 SWD

Good afternoon,

This is sent as a 48-hour notification, XTO is scheduled to inspect the lined containment at Corral Canyon 16 SWD released on (5/5/2022), on Thursday, May 12, 2022, at 12pm MST. A 24 hour release notification was sent out on Friday, May 6, 2022 8:40 AM since the release was greater than 25 barrels in volume. Please call us with any questions or concerns.

GPS Coordinates: (32.13537,-103.99388)

Thank you,

**Garrett Green**
Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

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

## Collins, Melanie

**From:** Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
**Sent:** Monday, May 9, 2022 4:59 PM
**To:** Green, Garrett J
**Cc:** DelawareSpills /SM; Bratcher, Mike, EMNRD; Nobui, Jennifer, EMNRD; Harimon, Jocelyn, EMNRD
**Subject:** RE: [EXTERNAL] XTO 48 Hour Liner Inspection - Corral Canyon 16 SWD

**Follow Up Flag:** Follow up
**Flag Status:** Flagged

Garrett,

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

**Robert Hamlet** • Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
http://www.emnrd.state.nm.us/OCD/

**From:** Green, Garrett J <garrett.green@exxonmobil.com>
**Sent:** Monday, May 9, 2022 2:15 PM
**To:** Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
**Cc:** DelawareSpills /SM <DelawareSpills@exxonmobil.com>
**Subject:** [EXTERNAL] XTO 48 Hour Liner Inspection - Corral Canyon 16 SWD

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

Good afternoon,

This is sent as a 48-hour notification, XTO is scheduled to inspect the lined containment at Corral Canyon 16 SWD released on (5/5/2022), on Thursday, May 12, 2022, at 12pm MST. A 24 hour release notification was sent out on Friday, May 6, 2022 8:40 AM since the release was greater than 25 barrels in volume. Please call us with any questions or concerns.

GPS Coordinates: (32.13537,-103.99388)

Thank you,

**Garrett Green**
Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

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

**District I**
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
**District II**
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
**District III**
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
**District IV**
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

# State of New Mexico
# Energy, Minerals and Natural Resources
# Oil Conservation Division
# 1220 S. St Francis Dr.
# Santa Fe, NM 87505

CONDITIONS

Action 131219

## CONDITIONS

| | |
|---|---|
| Operator:<br>XTO ENERGY, INC<br>6401 Holiday Hill Road<br>Midland, TX 79707 | OGRID:<br>5380 |
| | Action Number:<br>131219 |
| | Action Type:<br>[C-141] Release Corrective Action (C-141) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| jnobui | Closure Report Approved. Please implement 19.15.29.13 NMAC when completing P&A. | 8/29/2022 |