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	NAPP2215848746
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 32.41194 Longitude -104.07852
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Big Eddy Unit 160	Site Type Tank Battery
Date Release Discovered 06/01/2022	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
C	10	22S	28E	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) 37.50	Volume Recovered (bbls) 37.00
☐ 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: Corrosion caused a 1-inch connection on a tank to release fluids into containment and to pad. All free fluids were recovered. A third-party contractor has been retained for remediation purposes.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2215848746
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? A release 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 Bratcher, Mike, EMNRD; Hamlet, Robert, EMNRD; ocd.enviro@state.nm.us on Thursday, June 2, 2022 2:09 PM via email.

Initial Response

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

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

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

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

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

Printed Name: Garrett Green
Title: SSHE Coordinator
Signature: 
Date: 06/07/2022
email: garret.green@exxonmobil.com
Telephone: 575-200-0729

OCD Only

Received by: Jocelyn Harimon
Date: 06/07/2022

Location:	Big Eddy Unit 160 battery	
Spill Date:	6/1/2022	

Area 1		
Approximate Area =	207.74	cu. ft.
VOLUME OF LEAK		
Total Crude Oil =	37.00	bbls
Total Produced Water =	0.00	bbls

Area 2		
Approximate Area =	1492.00	sq. ft.
Average Saturation (or depth) of spill =	0.75	inches

Average Porosity Factor =	0.03	

VOLUME OF LEAK		
Total Crude Oil =	0.50	bbls
Total Produced Water =	0.00	bbls

TOTAL VOLUME OF LEAK		
Total Crude Oil =	**37.50**	**bbls**
Total Produced Water =	**0.00**	**bbls**
TOTAL VOLUME RECOVERED		
Total Crude Oil =	**37.00**	**bbls**
Total Produced Water =	**0.00**	**bbls**

Incident ID	nAPP2215848746
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	nAPP2215848746
District RP	
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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: ____08/30/2022_____

email: _garrett.green@exxonmobil.com_____ Telephone: ____575-200-0729_____

OCD Only

Received by: __Jocelyn Harimon_____ Date: 08/31/2022

Incident ID	nAPP2215848746
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: _Garrett Green_____ Title: _Environmental Coordinator_____

Signature: _____ Date: __08/30/2022_____

email: __garrett.green@exxonmobil.com_____ Telephone: ___575-200-0729_____

OCD Only

Received by: Jocelyn Harimon Date: 08/31/2022

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: _____ Date: _____

Printed Name: _____ Title: _____

ENSOLUM

August 30, 2022

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

Re: Closure Request
Big Eddy Unit 160
Incident Number nAPP2215848746
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, excavation, and soil sampling activities at the Big Eddy Unit 160 (Site). The purpose of the site assessment and soil sampling activities was to address impacts to soil following a release of crude oil at the Site. Based on the excavation activities and laboratory analytical results from the soil sampling events, XTO is submitting this Closure Request, describing remediation that has occurred and requesting closure for Incident Number nAPP2215848746.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit C, Section 10, Township 22 South, Range 28 East, in Eddy County, New Mexico (32.41194° N, 104.07852 °W) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On June 1, 2022, corrosion on a 1-inch connection on a tank resulted in the release of 37.5 barrels (bbls) of crude oil into a lined containment and onto the surface of the well pad. A vacuum truck was immediately dispatched to the Site to recover the free-standing fluids; approximately 37 bbls of crude oil were recovered. XTO immediately reported the release to the New Mexico Oil Conservation Division (NMOCD) via email on June 2, 2022. A Release Notification Form C-141 (Form C-141) was submitted on June 7, 2022. The release was assigned Incident Number nAPP2215848746.

A 48-hour advance notice of liner inspection was provided via email to the NMOCD District II. On July 22, 2022, a liner integrity inspection was conducted following fluid recovery from the release. Upon inspection, the liner was determined to be competent.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

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

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on a data from a nearby soil boring. On January 23, 2012, a soil boring (C-03534) was drilled 0.46 miles northeat of the Site utilizing an air rotary rig. Soil boring C-03534 was drilled to a depth of 150 feet bgs. No groundwater was encountered in the soil boring. The referenced well records are includeed in Appendix A.

The closest continuously flowing or significant watercourse to the Site is an emergent wetland, located approximately 330 feet north 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 22, 2022, following the liner inspection, Ensolum personnel visited the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. Preliminary soil samples (SS01 through SS05) were collected within and around the release extent from a depth of approximately 0. 5 feet bgs to assess the lateral extent of the impacted soil. The preliminary soil samples were field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation is included in Appendix B.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

Laboratory analytical results for preliminary soil sample SS01, collected within the release extent, indicated TPH-GRO/TPH-DRO and TPH concentrations exceeded the Closure Criteria. Laboratory analytical results for preliminary soil samples SS02 through SS05, collected laterally around the release and containment indicated benzene, BTEX, TPH-GRO/TPH-DRO, TPH and chloride concentrations were in compliance with the Closure Criteria and the strictest Table 1 Closure Criteria, confirming the extent of the release. Based on visible staining in the release area and laboratory analytical results for the preliminary soil sample SS01, excavation activities were warranted.

EXCAVATION SOIL SAMPLING ACTIVITIES

On August 17, 2022, Ensolum personnel were at the Site to oversee excavation activities. Impacted soil was excavated from the release area as indicated by visible staining, field screening activities, and laboratory analytical results for preliminary soil sample SS01. Due to the proximity to the lined containment and active production pipelines, excavation activities were performed manually with hand shovels. To direct excavation activities, Ensolum personnel screened soil for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively.

Following removal of impacted soil, Ensolum personnel collected a 5-point composite soil sample representing 115 square feet from the floor of the excavation. The 5-point composite sample was collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil sample FS01 was collected from the floor of the excavation at a depth of 1.5 feet bgs. Due to the shallow depth of the excavation, soil from the sidewalls was incorporated into the floor sample. The excavation soil sample was collected, handled, and analyzed following the same procedures as described above. The excavation extent and excavation soil sample location are presented on Figure 3.

The excavation extent measured approximately 115 square feet. A total of approximately 7 cubic yards of impacted soil were removed during the excavation activities. The impacted soil was transported and properly disposed of at the R360 Facility in Carlsbad, New Mexico. After completion of confirmation sampling, the excavation area was secured with fencing.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for the excavation floor soil sample FS01 collected from the excavation extent, indicated benzene, BTEX, TPH-DRO/TPH-GRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix C.

CLOSURE REQUEST

Site assessment and excavation activities were conducted at the Site to address the June 1, 2022, release of crude oil to the lined containment and pad. Laboratory analytical results for the excavation soil sample, collected from the excavation extent, indicated benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria. Based on the soil sample analytical results, no further remediation was required. In addition, soil samples SS02 through SS05 define the extent of the release laterally and are compliant with the strictest Table 1 Closure Criteria. XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions.

Excavation of impacted soil has mitigated impacts at this Site. Depth to groundwater has been estimated to be greater than 100 feet bgs and no other sensitive receptors were identified near the release extent. XTO believes these remedial actions are protective of human health, the environment, and groundwater. As such, XTO respectfully requests closure for Incident Number nAPP2215848746.

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

Sincerely,
Ensolum, LLC

Tacoma Morrissey
Senior Geologist

Ashley L. Ager, M.S., P.G.
Program Director

cc: Garrett Green, XTO
Shelby Pennington, XTO
Bureau of Land Management

Appendices:

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

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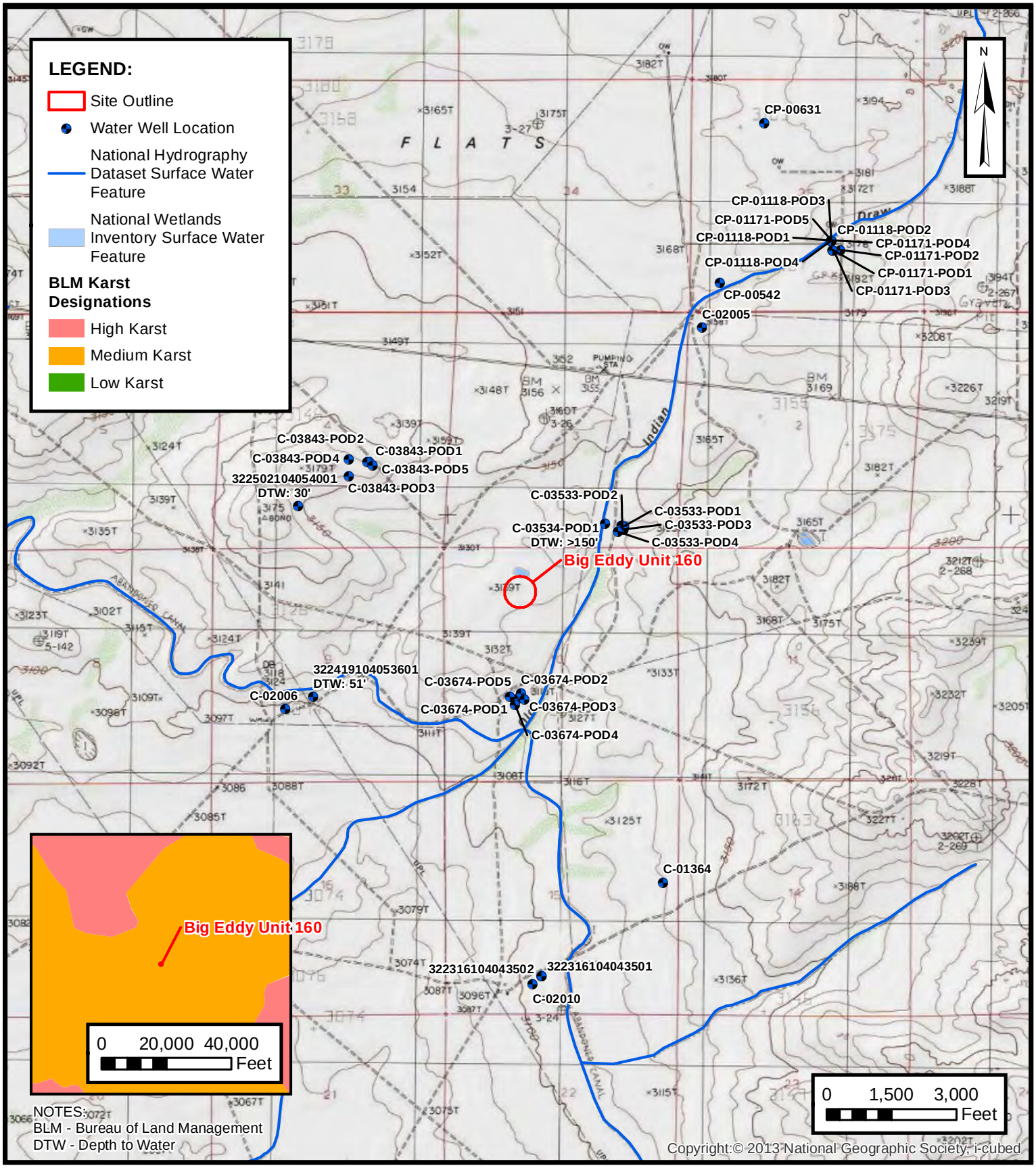
FIGURES



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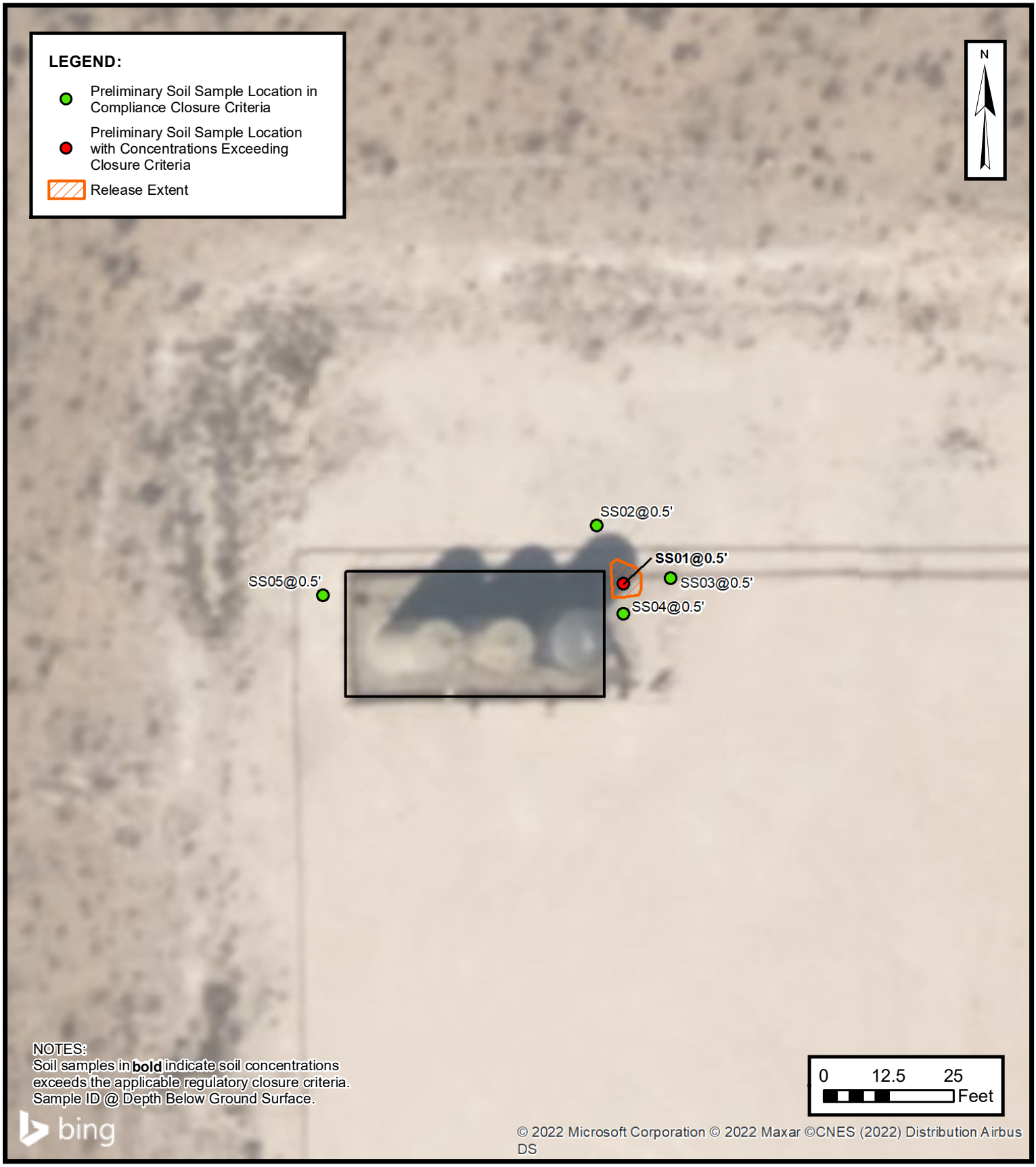
Environmental, Engineering and Hydrogeologic Consultants

SITE RECEPTOR MAP

XTO ENERGY, INC
BIG EDDY UNIT 160
NAPP2215848746
Unit C, Sec 10, T22S, R28E
Eddy County, New Mexico

FIGURE
1



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Environmental, Engineering and Hydrogeologic Consultants

PRELIMINARY SOIL SAMPLE LOCATIONS

XTO ENERGY, INC
BIG EDDY UNIT 160
NAPP2215848746
Unit C, Sec 10, T22S, R28E
Eddy County, New Mexico

FIGURE

2

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Environmental, Engineering and Hydrogeologic Consultants

EXCAVATION SOIL SAMPLE LOCATIONS

XTO ENERGY, INC
BIG EDDY UNIT 160
NAPP2215848746
Unit C, Sec 10, T22S, R28E
Eddy County, New Mexico

FIGURE
3

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Big Eddy Unit 160
XTO Energy, Inc.
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Preliminary Soil Samples										
SS01	07/22/2022	0.5	<0.0200	<0.0401	2,800	16,200	<249	19,000	**19,000**	47.5
SS02	07/22/2022	0.5	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	73.5
SS03	07/22/2022	0.5	<0.00202	<0.00404	<49.9	<49.9	<49.9	<49.9	<49.9	135
SS04	07/22/2022	0.5	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	<49.9	68.7
SS05	07/22/2022	0.5	<0.000398	<49.9	<49.9	<49.9	<49.9	<49.9	<49.9	117
Floor Soil Samples										
FS01	08/17/2022	1.5	<0.00200	0.0447	<49.9	175	<49.9	175	175	44.0

Notes:

bgs: below ground surface
mg/kg: milligrams per kilogram
NMOCD: New Mexico Oil Conservation Division
BTEX: Benzene, Toluene, Ethylbenzene, and Total Xylenes
Concentrations in bold exceed the NMOCD Table 1 Closure Criteria or reclamation standard where applicable.
GRO: Gasoline Range Organics
DRO: Diesel Range Organics ORO: Oil Range Organics
TPH: Total Petroleum Hydrocarbons
Grey text: Indicates soil sample was excavated

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APPENDIX A

Referenced Well Records

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

POD NUMBER (WELL NUMBER): BASS 3 FED 4 #B MW-1 C-03534-POD1	OSE FILE NUMBER(S): C-03534
WELL OWNER NAME(S): ~~BERGO OPERATING CO~~ BOPCO LP	PHONE (OPTIONAL):
WELL OWNER MAILING ADDRESS: ~~6 DESTA DRIVE SUITE 3700, P.O. BOX 2760~~ 8522 W MEMORIAL	CITY: Carlsbad ~~MIDLAND~~ STATE: ~~TX~~ NM ZIP: 88220 ~~79702~~

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS
LATITUDE	32	24	58.38 N
LONGITUDE	104	4	19.89 W

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

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS: FROM HWY 529 & 62/180 GO W TURN INTO CATTLE GUARD FOLLOW 2 TRACK TURN W TO LOCATION.

2. OPTIONAL

(2.5 ACRE)	(10 ACRE)	(40 ACRE)	(160 ACRE)	SECTION	TOWNSHIP	RANGE
NW ¼	SE ¼	SW ¼	SE ¼	3	22 ☐ NORTH ☒ SOUTH	28 ~~☒~~ EAST ☐ WEST

SUBDIVISION NAME	LOT NUMBER	BLOCK NUMBER	UNIT/TRACT

HYDROGRAPHIC SURVEY	MAP NUMBER	TRACT NUMBER

2012 MAR 16 P 1:14 STATE ENGINEER ROSWELL, NEW MEXICO

3. DRILLING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD1478	EDWARD BRYAN	STRAUB CORPORATION

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
1-23-12	1-23-12	150'	150'	~~N/A~~ 106 *

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): N/A

DRILLING FLUID: ☑ AIR ☐ MUD ☐ ADDITIVES – SPECIFY:

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

DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	CASING MATERIAL	CONNECTION TYPE (CASING)	INSIDE DIA. CASING (IN)	CASING WALL THICKNESS (IN)	SLOT SIZE (IN)
150'	115'	6"	SCH 40 .010 SCREEN	FJ	2"	0.154	0.10
115'	+43"	6"	SCH 40 PVC RISER	FJ	2"	0.154	RISER

4. WATER BEARING STRATA

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	YIELD (GPM)

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA	TOTAL ESTIMATED WELL YIELD (GPM)

* Per Application

FOR OSE INTERNAL USE WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER C-3534	POD NUMBER C-03534-POD1	TRN NUMBER
LOCATION 22.28.3.4341		PAGE 1 OF 2

5. SEAL AND PUMP

TYPE OF PUMP: ☐ SUBMERSIBLE ☐ JET ☐ NO PUMP – WELL NOT EQUIPPED ☐ TURBINE ☐ CYLINDER ☐ OTHER – SPECIFY:

ANNULAR SEAL AND GRAVEL PACK	DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	MATERIAL TYPE AND SIZE	AMOUNT (CUBIC FT)	METHOD OF PLACEMENT
	0	2'	6"	.5 BAGS OF CONCRETE		TOPLOAD
	2'	96'	6"	15 BAGS OF HOLEPLUG		TOPLOAD
	96'	147'	6"	14 BAGS OF 20/40 SAND		TOPLOAD

6. GEOLOGIC LOG OF WELL

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	COLOR AND TYPE OF MATERIAL ENCOUNTERED (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	WATER BEARING?
0	11'	11'	TAN SILTY SAND - SANDSTONE - CALICHE	☐ YES ☑ NO
11'	16'	5'	TAN VERY FINE SAND - SANDSTONE	☐ YES ☑ NO
16'	18'	2'	REDDISH TAN FINE SAND - SANDSTONE	☐ YES ☑ NO
18'	20'	2'	RED FINE SAND - SANDSTONE	☐ YES ☑ NO
20'	60'	40'	RED SILTY SAND - SILTY CLAY	☐ YES ☑ NO
60'	66'	6'	RED FINE SAND - SANDSTONE	☐ YES ☑ NO
66'	71'	5'	RED FINE SAND - SANDSTONE - P GRAVEL	☐ YES ☑ NO
71'	100'	29'	RED FINE SAND - SANDSTONE	☐ YES ☑ NO
100'	150'	50'	TANNISH RED FINE SAND - SANDSTONE (LAYERS)	☐ YES ☑ NO
TD	150'			☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO

ATTACH ADDITIONAL PAGES AS NEEDED TO FULLY DESCRIBE THE GEOLOGIC LOG OF THE WELL

7. TEST & ADDITIONAL INFO

WELL TEST — METHOD: ☐ BAILER ☐ PUMP ☐ AIR LIFT ☐ OTHER – SPECIFY:

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

ADDITIONAL STATEMENTS OR EXPLANATIONS:

2X2 PAD
4X4X60 HIGH RISE
EDDY COUNTY

8. 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 20 DAYS AFTER COMPLETION OF WELL DRILLING:

[signature] SIGNATURE OF DRILLER

3-7-12 DATE

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER C-3534	POD NUMBER C-03534-POD1	TRN NUMBER
LOCATION 22.28.3.434		PAGE 2 OF 2

Locator Tool Report

General Information:

Application ID:29 Date: 03-15-2012 Time: 09:59:43

WR File Number: C-03534-POD1
Purpose: POINT OF DIVERSION

Applicant First Name: BOPCO LP
Applicant Last Name: MONITOR WELL (SITE B: TMW-1)

GW Basin: CARLSBAD
County: EDDY

Critical Management Area Name(s): NONE
Special Condition Area Name(s): NONE
Land Grant Name: NON GRANT

PLSS Description (New Mexico Principal Meridian):

NW 1/4 of SE 1/4 of SW 1/4 of SE 1/4 of Section 03, Township 22S, Range 28E.

Coordinate System Details:

Geographic Coordinates:

Latitude:	32 Degrees	24 Minutes	58.~~0~~ 38 Seconds	N
Longitude:	104 Degrees	4 Minutes	~~20.0~~ 19.89 Seconds	W

Universal Transverse Mercator Zone: 13N

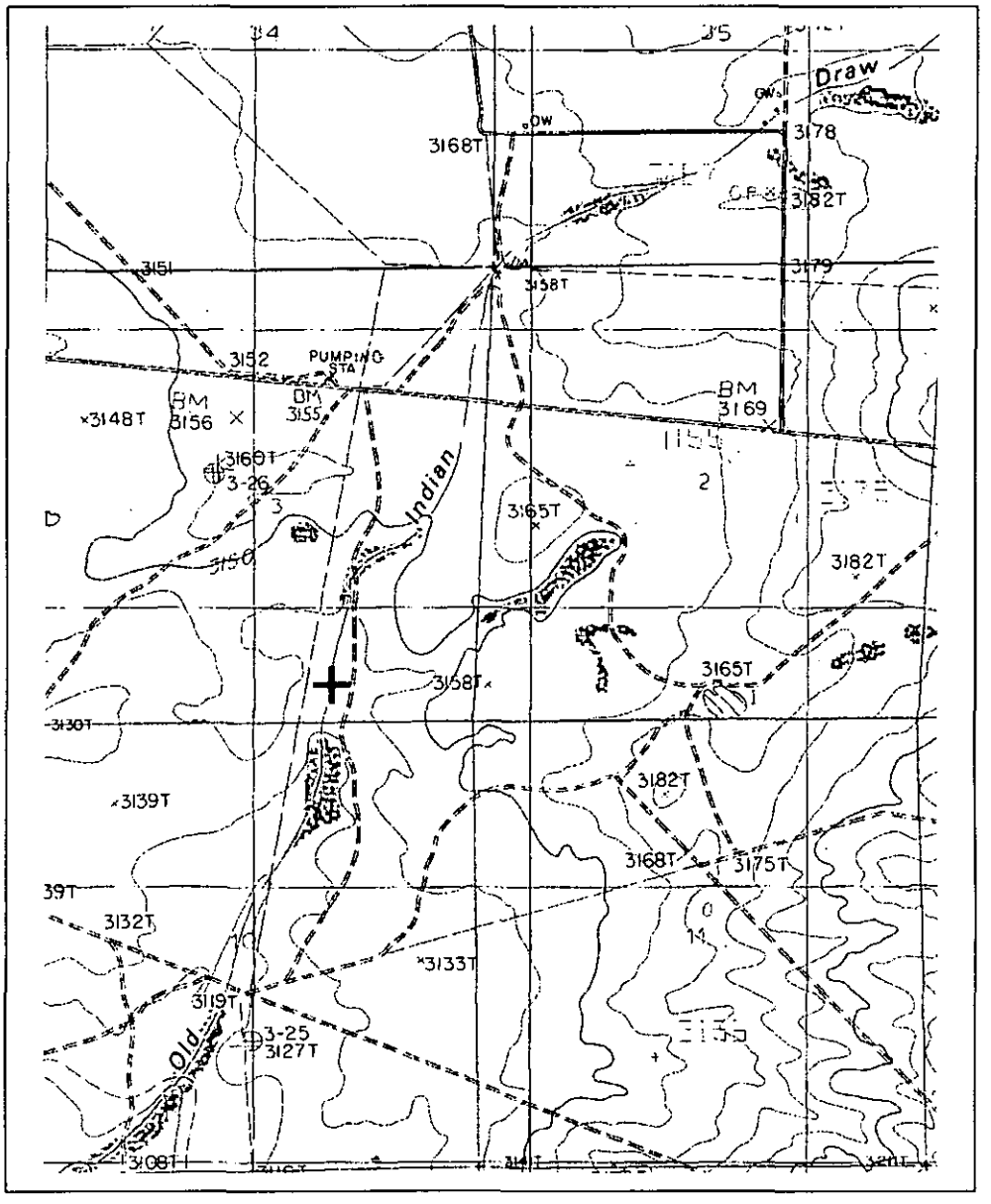
NAD 1983(92) (Meters)	N: 3,586,939	E: 587,237
NAD 1983(92) (Survey Feet)	N: 11,768,148	E: 1,926,627
NAD 1927 (Meters)	N: 3,586,737	E: 587,286
NAD 1927 (Survey Feet)	N: 11,767,485	E: 1,926,788

State Plane Coordinate System Zone: New Mexico East

NAD 1983(92) (Meters)	N: 157,037	E: 189,559
NAD 1983(92) (Survey Feet)	N: 515,211	E: 621,911
NAD 1927 (Meters)	N: 157,018	E: 177,007
NAD 1927 (Survey Feet)	N: 515,151	E: 580,730

NEW MEXICO OFFICE OF STATE ENGINEER

Locator Tool Report



WR File Number: C-03534-POD1 Scale: 1:27,077

Northing/Easting: UTM83(92) (Meter): N: 3,586,939 E: 587,237

Northing/Easting: SPCS83(92) (Feet): N: 515,211 E: 621,911

GW Basin: Carlsbad

Print Date: 03/15/2012

National Water Information System: Web Interface

USGS Water Resources

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

Click to hideNews Bulletins

- Attention current WaterAlert users: NextGen WaterAlert is replacing Legacy WaterAlert. You must take action before 9/30/2022 to retain your alerts. Read more.
- Explore the *NEW* USGS National Water Dashboard interactive map to access real-time water data from over 13,500 stations nationwide.
- Full News

Groundwater levels for the Nation

Important: Next Generation Monitoring Location Page

Search Results -- 1 sites found

site_no list =

- 322502104054001

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

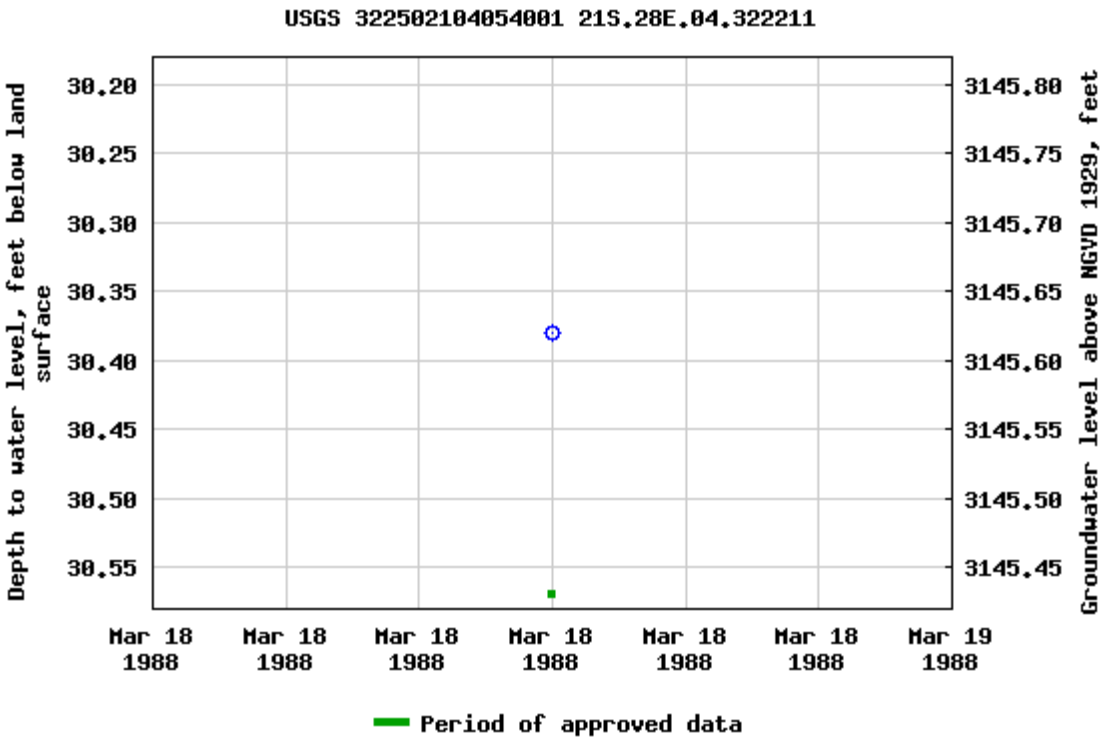
USGS 322502104054001 21S.28E.04.322211

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

Eddy County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°25'02", Longitude 104°05'40" NAD27
Land-surface elevation 3,176.00 feet above NGVD29
The depth of the well is 56.0 feet below land surface.
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Forty-Niner Member of Rustler Formation (310FRNR) local aquifer.

Output formats

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



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

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

ENSOLUM

APPENDIX B

Photographic Log

ENSOLUM

Photographic Log
XTO Energy, Inc.
Big Eddy Unit 160
NAPP2215848746

Photograph 1 Date:7/22/2022
Description: View of liner during inspection, facing west. No visible tears or holes observed.

Photograph 2 Date:7/22/2022
Description: View of staining outside containment, facing south.

Photograph 3 Date:8/17/2022
Description: View of excavation, facing west

Photograph 4 Date:8/17/2022
Description: View of final excavation, facing southwest

ENSOLUM

APPENDIX C

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: 890-2635-1
Laboratory Sample Delivery Group: Eddy County NM
Client Project/Site: BEU 160

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

Attn: Tacoma Morrissey

JKramer

Authorized for release by:
7/29/2022 11:27:54 AM

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

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

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

Client: Ensolum
Project/Site: BEU 160

Laboratory Job ID: 890-2635-1
SDG: Eddy County NM

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2635-1
SDG: Eddy County NM

Qualifiers

GC VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
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.

GC Semi VOA

Qualifier	Qualifier Description
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: BEU 160

Job ID: 890-2635-1
SDG: Eddy County NM

Job ID: 890-2635-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2635-1

Receipt
The sample was received on 7/22/2022 2:28 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 8.0°C

GC VOA
Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-30669 and analytical batch 880-30859 was outside the upper control limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: (LCSD 880-30589/2-A) and (880-17202-A-1-D MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-30589 and analytical batch 880-30859 was outside the upper control limits.

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-30669 and analytical batch 880-30859 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

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

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

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

Client Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2635-1
SDG: Eddy County NM

Client Sample ID: SS05

Date Collected: 07/22/22 09:10
Date Received: 07/22/22 14:28
Sample Depth: 0.5

Lab Sample ID: 890-2635-1

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000398	U	0.000398		mg/Kg		07/26/22 10:50	07/28/22 21:15	1
Toluene	<0.000398	U	0.000398		mg/Kg		07/26/22 10:50	07/28/22 21:15	1
Ethylbenzene	<0.000398	U	0.000398		mg/Kg		07/26/22 10:50	07/28/22 21:15	1
m-Xylene & p-Xylene	<0.000797	U	0.000797		mg/Kg		07/26/22 10:50	07/28/22 21:15	1
o-Xylene	<0.000398	U *+	0.000398		mg/Kg		07/26/22 10:50	07/28/22 21:15	1
Xylenes, Total	<0.000797	U	0.000797		mg/Kg		07/26/22 10:50	07/28/22 21:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*	*07/26/22 10:50*	*07/28/22 21:15*	*1*
1,4-Difluorobenzene (Surr)	*122*		*70 - 130*	*07/26/22 10:50*	*07/28/22 21:15*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.000797	U	0.000797		mg/Kg			07/29/22 09:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/28/22 09:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/27/22 16:56	07/27/22 23:56	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/27/22 16:56	07/27/22 23:56	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/27/22 16:56	07/27/22 23:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*86*		*70 - 130*	*07/27/22 16:56*	*07/27/22 23:56*	*1*
o-Terphenyl	*80*		*70 - 130*	*07/27/22 16:56*	*07/27/22 23:56*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**117**		4.95		mg/Kg			07/28/22 14:26	1

Surrogate Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2635-1
SDG: Eddy County NM

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)										
890-2635-1	SS05	111	122										
LCS 880-30589/1-A	Lab Control Sample	123	101										
LCS 880-30669/1-A	Lab Control Sample	118	98										
LCSD 880-30589/2-A	Lab Control Sample Dup	131 S1+	113										
LCSD 880-30669/2-A	Lab Control Sample Dup	116	106										
MB 880-30589/5-A	Method Blank	107	62 S1-										
MB 880-30669/5-A	Method Blank	91	63 S1-										

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-2635-1	SS05	86	80										
LCS 880-30847/2-A	Lab Control Sample	103	98										
LCSD 880-30847/3-A	Lab Control Sample Dup	97	95										
MB 880-30847/1-A	Method Blank	90	86										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2635-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-30589/5-A
Matrix: Solid
Analysis Batch: 30859

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30589

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000400	U	0.000400		mg/Kg		07/25/22 12:06	07/29/22 02:31	1
Toluene	<0.000400	U	0.000400		mg/Kg		07/25/22 12:06	07/29/22 02:31	1
Ethylbenzene	<0.000400	U	0.000400		mg/Kg		07/25/22 12:06	07/29/22 02:31	1
m-Xylene & p-Xylene	<0.000800	U	0.000800		mg/Kg		07/25/22 12:06	07/29/22 02:31	1
o-Xylene	<0.000400	U	0.000400		mg/Kg		07/25/22 12:06	07/29/22 02:31	1
Xylenes, Total	<0.000800	U	0.000800		mg/Kg		07/25/22 12:06	07/29/22 02:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*	*07/25/22 12:06*	*07/29/22 02:31*	*1*
1,4-Difluorobenzene (Surr)	*62*	*S1-*	*70 - 130*	*07/25/22 12:06*	*07/29/22 02:31*	*1*

Lab Sample ID: LCS 880-30589/1-A
Matrix: Solid
Analysis Batch: 30859

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30589

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1106		mg/Kg		111	70 - 130
Toluene	0.100	0.1060		mg/Kg		106	70 - 130
Ethylbenzene	0.100	0.1050		mg/Kg		105	70 - 130
m-Xylene & p-Xylene	0.200	0.2101		mg/Kg		105	70 - 130
o-Xylene	0.100	0.1245		mg/Kg		125	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*123*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: LCSD 880-30589/2-A
Matrix: Solid
Analysis Batch: 30859

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30589

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1160		mg/Kg		116	70 - 130	5	35
Toluene	0.100	0.1083		mg/Kg		108	70 - 130	2	35
Ethylbenzene	0.100	0.1026		mg/Kg		103	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.2112		mg/Kg		106	70 - 130	1	35
o-Xylene	0.100	0.1264		mg/Kg		126	70 - 130	1	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*131*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*

Lab Sample ID: MB 880-30669/5-A
Matrix: Solid
Analysis Batch: 30859

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30669

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/26/22 10:50	07/28/22 12:54	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/26/22 10:50	07/28/22 12:54	1

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2635-1
SDG: Eddy County NM

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

Lab Sample ID: MB 880-30669/5-A
Matrix: Solid
Analysis Batch: 30859

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30669

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/26/22 10:50	07/28/22 12:54	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/26/22 10:50	07/28/22 12:54	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/26/22 10:50	07/28/22 12:54	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/26/22 10:50	07/28/22 12:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*	*07/26/22 10:50*	*07/28/22 12:54*	*1*
1,4-Difluorobenzene (Surr)	*63*	*S1-*	*70 - 130*	*07/26/22 10:50*	*07/28/22 12:54*	*1*

Lab Sample ID: LCS 880-30669/1-A
Matrix: Solid
Analysis Batch: 30859

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30669

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1289		mg/Kg		129	70 - 130
Toluene	0.100	0.1149		mg/Kg		115	70 - 130
Ethylbenzene	0.100	0.1145		mg/Kg		115	70 - 130
m-Xylene & p-Xylene	0.200	0.2274		mg/Kg		114	70 - 130
o-Xylene	0.100	0.1307	*+	mg/Kg		131	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 880-30669/2-A
Matrix: Solid
Analysis Batch: 30859

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30669

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1141		mg/Kg		114	70 - 130	12	35
Toluene	0.100	0.1064		mg/Kg		106	70 - 130	8	35
Ethylbenzene	0.100	0.1061		mg/Kg		106	70 - 130	8	35
m-Xylene & p-Xylene	0.200	0.2107		mg/Kg		105	70 - 130	8	35
o-Xylene	0.100	0.1219		mg/Kg		122	70 - 130	7	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*

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

Lab Sample ID: MB 880-30847/1-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/27/22 16:56	07/27/22 20:46	1

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2635-1
SDG: Eddy County NM

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

Lab Sample ID: MB 880-30847/1-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/27/22 16:56	07/27/22 20:46	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/27/22 16:56	07/27/22 20:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*07/27/22 16:56*	*07/27/22 20:46*	*1*
o-Terphenyl	*86*		*70 - 130*	*07/27/22 16:56*	*07/27/22 20:46*	*1*

Lab Sample ID: LCS 880-30847/2-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30847

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1034		mg/Kg		103	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1030		mg/Kg		103	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*103*		*70 - 130*
o-Terphenyl	*98*		*70 - 130*

Lab Sample ID: LCSD 880-30847/3-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30847

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	981.8		mg/Kg		98	70 - 130	5	20
Diesel Range Organics (Over C10-C28)			1000	960.4		mg/Kg		96	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*97*		*70 - 130*
o-Terphenyl	*95*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30681/1-A
Matrix: Solid
Analysis Batch: 30825

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			07/28/22 12:54	1

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2635-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-30681/2-A
Matrix: Solid
Analysis Batch: 30825

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	275.0		mg/Kg		110	90 - 110

Lab Sample ID: LCSD 880-30681/3-A
Matrix: Solid
Analysis Batch: 30825

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	267.6		mg/Kg		107	90 - 110	3	20

QC Association Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2635-1
SDG: Eddy County NM

GC VOA

Prep Batch: 30589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-30589/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30589/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30589/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Prep Batch: 30669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2635-1	SS05	Total/NA	Solid	5035	
MB 880-30669/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30669/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30669/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 30859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2635-1	SS05	Total/NA	Solid	8021B	30669
MB 880-30589/5-A	Method Blank	Total/NA	Solid	8021B	30589
MB 880-30669/5-A	Method Blank	Total/NA	Solid	8021B	30669
LCS 880-30589/1-A	Lab Control Sample	Total/NA	Solid	8021B	30589
LCS 880-30669/1-A	Lab Control Sample	Total/NA	Solid	8021B	30669
LCSD 880-30589/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30589
LCSD 880-30669/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30669

Analysis Batch: 30971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2635-1	SS05	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 30743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2635-1	SS05	Total/NA	Solid	8015B NM	30847
MB 880-30847/1-A	Method Blank	Total/NA	Solid	8015B NM	30847
LCS 880-30847/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30847
LCSD 880-30847/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30847

Prep Batch: 30847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2635-1	SS05	Total/NA	Solid	8015NM Prep	
MB 880-30847/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30847/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30847/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 30873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2635-1	SS05	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 30681

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2635-1	SS05	Soluble	Solid	DI Leach	
MB 880-30681/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30681/2-A	Lab Control Sample	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2635-1
SDG: Eddy County NM

HPLC/IC (Continued)

Leach Batch: 30681 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-30681/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 30825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2635-1	SS05	Soluble	Solid	300.0	30681
MB 880-30681/1-A	Method Blank	Soluble	Solid	300.0	30681
LCS 880-30681/2-A	Lab Control Sample	Soluble	Solid	300.0	30681
LCSD 880-30681/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30681

Lab Chronicle

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2635-1
SDG: Eddy County NM

Client Sample ID: SS05

Date Collected: 07/22/22 09:10
Date Received: 07/22/22 14:28

Lab Sample ID: 890-2635-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	30669	07/26/22 10:50	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	1.0 mL	30859	07/28/22 21:15	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30971	07/29/22 09:30	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30873	07/28/22 09:08	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30847	07/27/22 16:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30743	07/27/22 23:56	SM	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	30681	07/26/22 11:08	CH	XEN MID
Soluble	Analysis	300.0		1			30825	07/28/22 14:26	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: BEU 160

Job ID: 890-2635-1
SDG: Eddy County NM

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: BEU 160

Job ID: 890-2635-1
SDG: Eddy County NM

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: BEU 160

Job ID: 890-2635-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2635-1	SS05	Solid	07/22/22 09:10	07/22/22 14:28	0.5

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Chain of Custody

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

Work Order No: _____

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Project Manager:	Tacoma Morrissey	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	Company Name:	XTO Energy, Inc.
Address:	3122 National Parks Hwy.	Address:	3104 E. Green Street
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	3372578307	Email:	tmorrissey@ensolum.com

Work Order Comments

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

Project Name:	BEU 160	Turn Around	☑ Routine ☐ Rush
Project Number:	03E1558083	Due Date:	
Project Location:	Eddy County, NM	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	LC		
PO #:	N/A		

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:	5.2	
Total Containers:		Corrected Temperature:	5.0	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
SS05	S	7/22/2022	910	0.5	Comp	1	x	x	x

890-2635 Chain of Custody

Preservative Codes

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

Sample Comments

Incident ID: napp2215848746
Cost Center: 1138731001

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		7-22-22 1425			
3			4		
5			6		

Revised Date 08/25/2020 Rev 2020 2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2635-1
SDG Number: Eddy County NM

Login Number: 2635
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: 890-2635-1
SDG Number: Eddy County NM

Login Number: 2635
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 07/26/22 10:50 AM

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

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-2636-1
Laboratory Sample Delivery Group: Eddy County NM
Client Project/Site: BEU 160

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

Attn: Tacoma Morrissey

JKramer

Authorized for release by:
8/2/2022 1:08:07 PM

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

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

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

Client: Ensolum
Project/Site: BEU 160

Laboratory Job ID: 890-2636-1
SDG: Eddy County NM

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2636-1
SDG: Eddy County NM

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
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: BEU 160

Job ID: 890-2636-1
SDG: Eddy County NM

Job ID: 890-2636-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2636-1

Receipt
The sample was received on 7/22/2022 2:28 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 8.0°C

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-30914 and analytical batch 880-31149 was outside control limits. Sample matrix interference is suspected.

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

GC Semi VOA
Method 8015MOD_NM: The matrix spike (MS) recoveries for preparation batch 880-30847 and analytical batch 880-30743 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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

Client Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2636-1
SDG: Eddy County NM

Client Sample ID: SS04

Date Collected: 07/22/22 08:35
Date Received: 07/22/22 14:28
Sample Depth: 0.5

Lab Sample ID: 890-2636-1

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		07/28/22 10:44	08/02/22 05:16	1
Toluene	<0.00201	U	0.00201		mg/Kg		07/28/22 10:44	08/02/22 05:16	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		07/28/22 10:44	08/02/22 05:16	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		07/28/22 10:44	08/02/22 05:16	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		07/28/22 10:44	08/02/22 05:16	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		07/28/22 10:44	08/02/22 05:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*07/28/22 10:44*	*08/02/22 05:16*	*1*
1,4-Difluorobenzene (Surr)	*119*		*70 - 130*	*07/28/22 10:44*	*08/02/22 05:16*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			08/02/22 12:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/28/22 09:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/27/22 16:56	07/28/22 00:16	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/27/22 16:56	07/28/22 00:16	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/27/22 16:56	07/28/22 00:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*07/27/22 16:56*	*07/28/22 00:16*	*1*
o-Terphenyl	*93*		*70 - 130*	*07/27/22 16:56*	*07/28/22 00:16*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**68.7**		5.04		mg/Kg			07/28/22 01:41	1

Surrogate Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2636-1
SDG: Eddy County NM

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)
880-17204-A-219-D MS	Matrix Spike	84	114
880-17204-A-219-E MSD	Matrix Spike Duplicate	79	113
890-2636-1	SS04	96	119
LCS 880-30914/1-A	Lab Control Sample	83	112
LCSD 880-30914/2-A	Lab Control Sample Dup	83	113
MB 880-30914/5-A	Method Blank	88	107
MB 880-31025/5-A	Method Blank	84	107

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)
890-2633-A-1-H MS	Matrix Spike	87	75
890-2633-A-1-I MSD	Matrix Spike Duplicate	89	75
890-2636-1	SS04	92	93
LCS 880-30847/2-A	Lab Control Sample	103	98
LCSD 880-30847/3-A	Lab Control Sample Dup	97	95
MB 880-30847/1-A	Method Blank	90	86

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2636-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-30914/5-A
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30914

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/28/22 10:44	08/01/22 22:02	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/28/22 10:44	08/01/22 22:02	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/28/22 10:44	08/01/22 22:02	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/28/22 10:44	08/01/22 22:02	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/28/22 10:44	08/01/22 22:02	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/28/22 10:44	08/01/22 22:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*	*07/28/22 10:44*	*08/01/22 22:02*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*07/28/22 10:44*	*08/01/22 22:02*	*1*

Lab Sample ID: LCS 880-30914/1-A
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30914

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1036		mg/Kg		104	70 - 130		
Toluene			0.100	0.09141		mg/Kg		91	70 - 130		
Ethylbenzene			0.100	0.08864		mg/Kg		89	70 - 130		
m-Xylene & p-Xylene			0.200	0.1728		mg/Kg		86	70 - 130		
o-Xylene			0.100	0.08598		mg/Kg		86	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*83*		*70 - 130*
1,4-Difluorobenzene (Surr)	*112*		*70 - 130*

Lab Sample ID: LCSD 880-30914/2-A
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30914

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1144		mg/Kg		114	70 - 130	10	35
Toluene			0.100	0.09687		mg/Kg		97	70 - 130	6	35
Ethylbenzene			0.100	0.09273		mg/Kg		93	70 - 130	5	35
m-Xylene & p-Xylene			0.200	0.1810		mg/Kg		91	70 - 130	5	35
o-Xylene			0.100	0.08961		mg/Kg		90	70 - 130	4	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*83*		*70 - 130*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*

Lab Sample ID: 880-17204-A-219-D MS
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30914

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U	0.101	0.09553		mg/Kg		94	70 - 130		
Toluene	0.00294		0.101	0.08456		mg/Kg		81	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2636-1
SDG: Eddy County NM

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

Lab Sample ID: 880-17204-A-219-D MS
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30914

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U	0.101	0.07943		mg/Kg		78	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.201	0.1536		mg/Kg		75	70 - 130
o-Xylene	<0.00201	U F1	0.101	0.07431		mg/Kg		73	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*
1,4-Difluorobenzene (Surr)	*114*		*70 - 130*

Lab Sample ID: 880-17204-A-219-E MSD
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 30914

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0990	0.09528		mg/Kg		95	70 - 130	0	35
Toluene	0.00294		0.0990	0.08036		mg/Kg		78	70 - 130	5	35
Ethylbenzene	<0.00201	U	0.0990	0.07361		mg/Kg		73	70 - 130	8	35
m-Xylene & p-Xylene	<0.00402	U	0.198	0.1413		mg/Kg		70	70 - 130	8	35
o-Xylene	<0.00201	U F1	0.0990	0.06848	F1	mg/Kg		69	70 - 130	8	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*79*		*70 - 130*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*

Lab Sample ID: MB 880-31025/5-A
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31025

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/29/22 15:19	08/01/22 11:15	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/29/22 15:19	08/01/22 11:15	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/29/22 15:19	08/01/22 11:15	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/29/22 15:19	08/01/22 11:15	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/29/22 15:19	08/01/22 11:15	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/29/22 15:19	08/01/22 11:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*	*07/29/22 15:19*	*08/01/22 11:15*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*07/29/22 15:19*	*08/01/22 11:15*	*1*

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

Lab Sample ID: MB 880-30847/1-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/27/22 16:56	07/27/22 20:46	1

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2636-1
SDG: Eddy County NM

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

Lab Sample ID: MB 880-30847/1-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/27/22 16:56	07/27/22 20:46	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/27/22 16:56	07/27/22 20:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*07/27/22 16:56*	*07/27/22 20:46*	*1*
o-Terphenyl	*86*		*70 - 130*	*07/27/22 16:56*	*07/27/22 20:46*	*1*

Lab Sample ID: LCS 880-30847/2-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30847

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1034		mg/Kg		103	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1030		mg/Kg		103	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*103*		*70 - 130*
o-Terphenyl	*98*		*70 - 130*

Lab Sample ID: LCSD 880-30847/3-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30847

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	981.8		mg/Kg		98	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	1000	960.4		mg/Kg		96	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*97*		*70 - 130*
o-Terphenyl	*95*		*70 - 130*

Lab Sample ID: 890-2633-A-1-H MS
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30847

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	1047		mg/Kg		100	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U F1	1000	683.6	F1	mg/Kg		68	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*87*		*70 - 130*
o-Terphenyl	*75*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2636-1
SDG: Eddy County NM

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

Lab Sample ID: 890-2633-A-1-I MSD
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 30847

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	999	1072		mg/Kg		103	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<50.0	U F1	999	696.8		mg/Kg		70	70 - 130	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*89*		*70 - 130*
o-Terphenyl	*75*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30679/1-A
Matrix: Solid
Analysis Batch: 30826

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			07/28/22 01:17	1

Lab Sample ID: LCS 880-30679/2-A
Matrix: Solid
Analysis Batch: 30826

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	261.5		mg/Kg		105	90 - 110

Lab Sample ID: LCSD 880-30679/3-A
Matrix: Solid
Analysis Batch: 30826

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	262.2		mg/Kg		105	90 - 110	0	20

Lab Sample ID: 890-2636-1 MS
Matrix: Solid
Analysis Batch: 30826

Client Sample ID: SS04
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	68.7		252	316.7		mg/Kg		98	90 - 110

Lab Sample ID: 890-2636-1 MSD
Matrix: Solid
Analysis Batch: 30826

Client Sample ID: SS04
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	68.7		252	317.5		mg/Kg		99	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2636-1
SDG: Eddy County NM

GC VOA

Prep Batch: 30914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2636-1	SS04	Total/NA	Solid	5035	
MB 880-30914/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30914/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30914/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17204-A-219-D MS	Matrix Spike	Total/NA	Solid	5035	
880-17204-A-219-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 31025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31025/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 31149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2636-1	SS04	Total/NA	Solid	8021B	30914
MB 880-30914/5-A	Method Blank	Total/NA	Solid	8021B	30914
MB 880-31025/5-A	Method Blank	Total/NA	Solid	8021B	31025
LCS 880-30914/1-A	Lab Control Sample	Total/NA	Solid	8021B	30914
LCSD 880-30914/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30914
880-17204-A-219-D MS	Matrix Spike	Total/NA	Solid	8021B	30914
880-17204-A-219-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30914

Analysis Batch: 31315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2636-1	SS04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 30743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2636-1	SS04	Total/NA	Solid	8015B NM	30847
MB 880-30847/1-A	Method Blank	Total/NA	Solid	8015B NM	30847
LCS 880-30847/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30847
LCSD 880-30847/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30847
890-2633-A-1-H MS	Matrix Spike	Total/NA	Solid	8015B NM	30847
890-2633-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30847

Prep Batch: 30847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2636-1	SS04	Total/NA	Solid	8015NM Prep	
MB 880-30847/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30847/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30847/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2633-A-1-H MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2633-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 30874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2636-1	SS04	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2636-1
SDG: Eddy County NM

HPLC/IC

Leach Batch: 30679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2636-1	SS04	Soluble	Solid	DI Leach	
MB 880-30679/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30679/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30679/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2636-1 MS	SS04	Soluble	Solid	DI Leach	
890-2636-1 MSD	SS04	Soluble	Solid	DI Leach	

Analysis Batch: 30826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2636-1	SS04	Soluble	Solid	300.0	30679
MB 880-30679/1-A	Method Blank	Soluble	Solid	300.0	30679
LCS 880-30679/2-A	Lab Control Sample	Soluble	Solid	300.0	30679
LCSD 880-30679/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30679
890-2636-1 MS	SS04	Soluble	Solid	300.0	30679
890-2636-1 MSD	SS04	Soluble	Solid	300.0	30679

Lab Chronicle

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2636-1
SDG: Eddy County NM

Client Sample ID: SS04

Date Collected: 07/22/22 08:35
Date Received: 07/22/22 14:28

Lab Sample ID: 890-2636-1

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	30914	07/28/22 10:44	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31149	08/02/22 05:16	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			31315	08/02/22 12:18	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30874	07/28/22 09:08	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	30847	07/27/22 16:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30743	07/28/22 00:16	SM	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	30679	07/26/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30826	07/28/22 01:41	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: BEU 160

Job ID: 890-2636-1
SDG: Eddy County NM

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: BEU 160

Job ID: 890-2636-1
SDG: Eddy County NM

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: BEU 160

Job ID: 890-2636-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2636-1	SS04	Solid	07/22/22 08:35	07/22/22 14:28	0.5

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Chain of Custody

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

Work Order No: _____

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Project Manager:	Tacoma Morrissey	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	Company Name:	XTO Energy, Inc.
Address:	3122 National Parks Hwy.	Address:	3104 E. Green Street
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	3372578307	Email:	tmorrissey@ensolum.com

Work Order Comments

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

Project Name:	BEU 160	**Turn Around**	
Project Number:	03E1558083	☑ Routine ☐ Rush	
Project Location:	Eddy County, NM	Due Date:	
Sampler's Name:	LC	TAT starts the day received by the lab, if received by 4:30pm	
PO #:	N/A		

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:	8.2	
Total Containers:		Corrected Temperature:	8.0	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)	Parameters
SS04	S	7/22/2022	835	0.5	Comp	1		x	x	x	

890-2636 Chain of Custody

Preservative Codes

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

Sample Comments

Incident ID: napp2215848746
Cost Center: 1138731001

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		7.22.22 1428			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2636-1
SDG Number: Eddy County NM

Login Number: 2636
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: 890-2636-1
SDG Number: Eddy County NM

Login Number: 2636
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 07/26/22 10:50 AM

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

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-2637-1
Laboratory Sample Delivery Group: Eddy County NM
Client Project/Site: BEU 160

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

Attn: Tacoma Morrissey

JKramer

Authorized for release by:
8/2/2022 1:08:29 PM

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

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

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

Client: Ensolum
Project/Site: BEU 160

Laboratory Job ID: 890-2637-1
SDG: Eddy County NM

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2637-1
SDG: Eddy County NM

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
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: BEU 160

Job ID: 890-2637-1
SDG: Eddy County NM

Job ID: 890-2637-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2637-1

Receipt
The sample was received on 7/22/2022 2:28 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 8.0°C

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-30914 and analytical batch 880-31149 was outside control limits. Sample matrix interference is suspected.

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

GC Semi VOA
Method 8015MOD_NM: The matrix spike (MS) recoveries for preparation batch 880-30847 and analytical batch 880-30743 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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

Client Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2637-1
SDG: Eddy County NM

Client Sample ID: SS03

Date Collected: 07/22/22 08:30
Date Received: 07/22/22 14:28
Sample Depth: 0.5

Lab Sample ID: 890-2637-1

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		07/28/22 10:44	08/02/22 05:37	1
Toluene	<0.00202	U	0.00202		mg/Kg		07/28/22 10:44	08/02/22 05:37	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		07/28/22 10:44	08/02/22 05:37	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		07/28/22 10:44	08/02/22 05:37	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		07/28/22 10:44	08/02/22 05:37	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		07/28/22 10:44	08/02/22 05:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*07/28/22 10:44*	*08/02/22 05:37*	*1*
1,4-Difluorobenzene (Surr)	*119*		*70 - 130*	*07/28/22 10:44*	*08/02/22 05:37*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404		mg/Kg			08/02/22 12:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/28/22 09:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/27/22 16:56	07/28/22 00:36	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/27/22 16:56	07/28/22 00:36	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/27/22 16:56	07/28/22 00:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*84*		*70 - 130*	*07/27/22 16:56*	*07/28/22 00:36*	*1*
o-Terphenyl	*80*		*70 - 130*	*07/27/22 16:56*	*07/28/22 00:36*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**135**		4.95		mg/Kg			07/28/22 02:04	1

Surrogate Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2637-1
SDG: Eddy County NM

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)
880-17204-A-219-D MS	Matrix Spike	84	114
880-17204-A-219-E MSD	Matrix Spike Duplicate	79	113
890-2637-1	SS03	101	119
LCS 880-30914/1-A	Lab Control Sample	83	112
LCSD 880-30914/2-A	Lab Control Sample Dup	83	113
MB 880-30914/5-A	Method Blank	88	107
MB 880-31025/5-A	Method Blank	84	107

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)
890-2633-A-1-H MS	Matrix Spike	87	75
890-2633-A-1-I MSD	Matrix Spike Duplicate	89	75
890-2637-1	SS03	84	80
LCS 880-30847/2-A	Lab Control Sample	103	98
LCSD 880-30847/3-A	Lab Control Sample Dup	97	95
MB 880-30847/1-A	Method Blank	90	86

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2637-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-30914/5-A
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30914

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/28/22 10:44	08/01/22 22:02	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/28/22 10:44	08/01/22 22:02	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/28/22 10:44	08/01/22 22:02	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/28/22 10:44	08/01/22 22:02	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/28/22 10:44	08/01/22 22:02	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/28/22 10:44	08/01/22 22:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*	*07/28/22 10:44*	*08/01/22 22:02*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*07/28/22 10:44*	*08/01/22 22:02*	*1*

Lab Sample ID: LCS 880-30914/1-A
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30914

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1036		mg/Kg		104	70 - 130
Toluene	0.100	0.09141		mg/Kg		91	70 - 130
Ethylbenzene	0.100	0.08864		mg/Kg		89	70 - 130
m-Xylene & p-Xylene	0.200	0.1728		mg/Kg		86	70 - 130
o-Xylene	0.100	0.08598		mg/Kg		86	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*83*		*70 - 130*
1,4-Difluorobenzene (Surr)	*112*		*70 - 130*

Lab Sample ID: LCSD 880-30914/2-A
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30914

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1144		mg/Kg		114	70 - 130	10	35
Toluene	0.100	0.09687		mg/Kg		97	70 - 130	6	35
Ethylbenzene	0.100	0.09273		mg/Kg		93	70 - 130	5	35
m-Xylene & p-Xylene	0.200	0.1810		mg/Kg		91	70 - 130	5	35
o-Xylene	0.100	0.08961		mg/Kg		90	70 - 130	4	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*83*		*70 - 130*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*

Lab Sample ID: 880-17204-A-219-D MS
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30914

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U	0.101	0.09553		mg/Kg		94	70 - 130
Toluene	0.00294		0.101	0.08456		mg/Kg		81	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2637-1
SDG: Eddy County NM

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

Lab Sample ID: 880-17204-A-219-D MS
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30914

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U	0.101	0.07943		mg/Kg		78	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.201	0.1536		mg/Kg		75	70 - 130
o-Xylene	<0.00201	U F1	0.101	0.07431		mg/Kg		73	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*
1,4-Difluorobenzene (Surr)	*114*		*70 - 130*

Lab Sample ID: 880-17204-A-219-E MSD
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 30914

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0990	0.09528		mg/Kg		95	70 - 130	0	35
Toluene	0.00294		0.0990	0.08036		mg/Kg		78	70 - 130	5	35
Ethylbenzene	<0.00201	U	0.0990	0.07361		mg/Kg		73	70 - 130	8	35
m-Xylene & p-Xylene	<0.00402	U	0.198	0.1413		mg/Kg		70	70 - 130	8	35
o-Xylene	<0.00201	U F1	0.0990	0.06848	F1	mg/Kg		69	70 - 130	8	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*79*		*70 - 130*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*

Lab Sample ID: MB 880-31025/5-A
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31025

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/29/22 15:19	08/01/22 11:15	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/29/22 15:19	08/01/22 11:15	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/29/22 15:19	08/01/22 11:15	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/29/22 15:19	08/01/22 11:15	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/29/22 15:19	08/01/22 11:15	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/29/22 15:19	08/01/22 11:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*	*07/29/22 15:19*	*08/01/22 11:15*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*07/29/22 15:19*	*08/01/22 11:15*	*1*

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

Lab Sample ID: MB 880-30847/1-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/27/22 16:56	07/27/22 20:46	1

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2637-1
SDG: Eddy County NM

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

Lab Sample ID: MB 880-30847/1-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/27/22 16:56	07/27/22 20:46	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/27/22 16:56	07/27/22 20:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*07/27/22 16:56*	*07/27/22 20:46*	*1*
o-Terphenyl	*86*		*70 - 130*	*07/27/22 16:56*	*07/27/22 20:46*	*1*

Lab Sample ID: LCS 880-30847/2-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30847

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1034		mg/Kg		103	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1030		mg/Kg		103	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*103*		*70 - 130*
o-Terphenyl	*98*		*70 - 130*

Lab Sample ID: LCSD 880-30847/3-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30847

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	981.8		mg/Kg		98	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	1000	960.4		mg/Kg		96	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*97*		*70 - 130*
o-Terphenyl	*95*		*70 - 130*

Lab Sample ID: 890-2633-A-1-H MS
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30847

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	1047		mg/Kg		100	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U F1	1000	683.6	F1	mg/Kg		68	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*87*		*70 - 130*
o-Terphenyl	*75*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2637-1
SDG: Eddy County NM

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

Lab Sample ID: 890-2633-A-1-I MSD
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 30847

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	999	1072		mg/Kg		103	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<50.0	U F1	999	696.8		mg/Kg		70	70 - 130	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*89*		*70 - 130*
o-Terphenyl	*75*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30679/1-A
Matrix: Solid
Analysis Batch: 30826

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			07/28/22 01:17	1

Lab Sample ID: LCS 880-30679/2-A
Matrix: Solid
Analysis Batch: 30826

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	261.5		mg/Kg		105	90 - 110

Lab Sample ID: LCSD 880-30679/3-A
Matrix: Solid
Analysis Batch: 30826

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	262.2		mg/Kg		105	90 - 110	0	20

Lab Sample ID: 890-2636-A-1-B MS
Matrix: Solid
Analysis Batch: 30826

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	68.7		252	316.7		mg/Kg		98	90 - 110

Lab Sample ID: 890-2636-A-1-C MSD
Matrix: Solid
Analysis Batch: 30826

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	68.7		252	317.5		mg/Kg		99	90 - 110	0	20

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2637-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-2641-A-7-B MS
Matrix: Solid
Analysis Batch: 30826

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	153		249	394.0		mg/Kg		97	90 - 110

Lab Sample ID: 890-2641-A-7-C MSD
Matrix: Solid
Analysis Batch: 30826

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	153		249	392.8		mg/Kg		96	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2637-1
SDG: Eddy County NM

GC VOA

Prep Batch: 30914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2637-1	SS03	Total/NA	Solid	5035	
MB 880-30914/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30914/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30914/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17204-A-219-D MS	Matrix Spike	Total/NA	Solid	5035	
880-17204-A-219-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 31025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31025/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 31149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2637-1	SS03	Total/NA	Solid	8021B	30914
MB 880-30914/5-A	Method Blank	Total/NA	Solid	8021B	30914
MB 880-31025/5-A	Method Blank	Total/NA	Solid	8021B	31025
LCS 880-30914/1-A	Lab Control Sample	Total/NA	Solid	8021B	30914
LCSD 880-30914/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30914
880-17204-A-219-D MS	Matrix Spike	Total/NA	Solid	8021B	30914
880-17204-A-219-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30914

Analysis Batch: 31316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2637-1	SS03	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 30743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2637-1	SS03	Total/NA	Solid	8015B NM	30847
MB 880-30847/1-A	Method Blank	Total/NA	Solid	8015B NM	30847
LCS 880-30847/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30847
LCSD 880-30847/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30847
890-2633-A-1-H MS	Matrix Spike	Total/NA	Solid	8015B NM	30847
890-2633-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30847

Prep Batch: 30847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2637-1	SS03	Total/NA	Solid	8015NM Prep	
MB 880-30847/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30847/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30847/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2633-A-1-H MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2633-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 30875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2637-1	SS03	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2637-1
SDG: Eddy County NM

HPLC/IC

Leach Batch: 30679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2637-1	SS03	Soluble	Solid	DI Leach	
MB 880-30679/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30679/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30679/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2636-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2636-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-2641-A-7-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2641-A-7-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 30826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2637-1	SS03	Soluble	Solid	300.0	30679
MB 880-30679/1-A	Method Blank	Soluble	Solid	300.0	30679
LCS 880-30679/2-A	Lab Control Sample	Soluble	Solid	300.0	30679
LCSD 880-30679/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30679
890-2636-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	30679
890-2636-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30679
890-2641-A-7-B MS	Matrix Spike	Soluble	Solid	300.0	30679
890-2641-A-7-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30679

Lab Chronicle

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2637-1
SDG: Eddy County NM

Client Sample ID: SS03

Date Collected: 07/22/22 08:30
Date Received: 07/22/22 14:28

Lab Sample ID: 890-2637-1

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			4.95 g	5 mL	30914	07/28/22 10:44	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31149	08/02/22 05:37	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			31316	08/02/22 12:18	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30875	07/28/22 09:08	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30847	07/27/22 16:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30743	07/28/22 00:36	SM	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	30679	07/26/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30826	07/28/22 02:04	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: BEU 160

Job ID: 890-2637-1
SDG: Eddy County NM

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: BEU 160

Job ID: 890-2637-1
SDG: Eddy County NM

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: BEU 160

Job ID: 890-2637-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2637-1	SS03	Solid	07/22/22 08:30	07/22/22 14:28	0.5

Chain of Custody

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

Work Order No: _____

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Project Manager:	Tacoma Morrissey	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	Company Name:	XTO Energy, Inc.
Address:	3122 National Parks Hwy.	Address:	3104 E. Green Street
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	3372578307	Email:	tmorrissey@ensolum.com

Work Order Comments

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

Project Name:	BEU 160	**Turn Around**	
Project Number:	03E1558083	☑ Routine ☐ Rush	
Project Location:	Eddy County, NM	Due Date:	
Sampler's Name:	LC	TAT starts the day received by the lab, if received by 4:30pm	
PO #:	N/A		

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Samples Received Intact:	(Yes) No	Thermometer ID:	THM-002	
Cooler Custody Seals:	Yes No ~~N/A~~	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No ~~N/A~~	Temperature Reading:	8.2	
Total Containers:		Corrected Temperature:	8.0	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
SS03	S	7/22/2022	830	0.5	Comp	1		x	x	x

890-2637 Chain of Custody

Preservative Codes

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

Sample Comments

Incident ID: napp2215848746

Cost Center: 1138731001

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Cole Cuff	7.22.22 1423			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2637-1
SDG Number: Eddy County NM

Login Number: 2637
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: 890-2637-1
SDG Number: Eddy County NM

Login Number: 2637
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 07/26/22 10:50 AM

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

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-2638-1
Laboratory Sample Delivery Group: Eddy County NM
Client Project/Site: BEU 160

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

Attn: Tacoma Morrissey

JKramer

Authorized for release by:
8/2/2022 1:08:58 PM

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

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

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

Client: Ensolum
Project/Site: BEU 160

Laboratory Job ID: 890-2638-1
SDG: Eddy County NM

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2638-1
SDG: Eddy County NM

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
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: BEU 160

Job ID: 890-2638-1
SDG: Eddy County NM

Job ID: 890-2638-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2638-1

Receipt
The sample was received on 7/22/2022 2:28 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 8.0°C

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-30914 and analytical batch 880-31149 was outside control limits. Sample matrix interference is suspected.

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

GC Semi VOA
Method 8015MOD_NM: The matrix spike (MS) recoveries for preparation batch 880-30847 and analytical batch 880-30743 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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

Client Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2638-1
SDG: Eddy County NM

Client Sample ID: SS02

Date Collected: 07/22/22 08:20
Date Received: 07/22/22 14:28
Sample Depth: 0.5

Lab Sample ID: 890-2638-1

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/28/22 10:44	08/02/22 05:57	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/28/22 10:44	08/02/22 05:57	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/28/22 10:44	08/02/22 05:57	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/28/22 10:44	08/02/22 05:57	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/28/22 10:44	08/02/22 05:57	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/28/22 10:44	08/02/22 05:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*07/28/22 10:44*	*08/02/22 05:57*	*1*
1,4-Difluorobenzene (Surr)	*119*		*70 - 130*	*07/28/22 10:44*	*08/02/22 05:57*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			08/02/22 12:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/28/22 09:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/27/22 16:56	07/28/22 00:56	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/27/22 16:56	07/28/22 00:56	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/27/22 16:56	07/28/22 00:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*88*		*70 - 130*	*07/27/22 16:56*	*07/28/22 00:56*	*1*
o-Terphenyl	*80*		*70 - 130*	*07/27/22 16:56*	*07/28/22 00:56*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**73.5**		4.99		mg/Kg			07/28/22 02:12	1

Surrogate Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2638-1
SDG: Eddy County NM

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)										
880-17204-A-219-D MS	Matrix Spike	84	114										
880-17204-A-219-E MSD	Matrix Spike Duplicate	79	113										
890-2638-1	SS02	96	119										
LCS 880-30914/1-A	Lab Control Sample	83	112										
LCSD 880-30914/2-A	Lab Control Sample Dup	83	113										
MB 880-30914/5-A	Method Blank	88	107										
MB 880-31025/5-A	Method Blank	84	107										

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)										
890-2633-A-1-H MS	Matrix Spike	87	75										
890-2633-A-1-I MSD	Matrix Spike Duplicate	89	75										
890-2638-1	SS02	88	80										
LCS 880-30847/2-A	Lab Control Sample	103	98										
LCSD 880-30847/3-A	Lab Control Sample Dup	97	95										
MB 880-30847/1-A	Method Blank	90	86										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2638-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-30914/5-A
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30914

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/28/22 10:44	08/01/22 22:02	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/28/22 10:44	08/01/22 22:02	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/28/22 10:44	08/01/22 22:02	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/28/22 10:44	08/01/22 22:02	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/28/22 10:44	08/01/22 22:02	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/28/22 10:44	08/01/22 22:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*	*07/28/22 10:44*	*08/01/22 22:02*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*07/28/22 10:44*	*08/01/22 22:02*	*1*

Lab Sample ID: LCS 880-30914/1-A
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30914

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1036		mg/Kg		104	70 - 130		
Toluene			0.100	0.09141		mg/Kg		91	70 - 130		
Ethylbenzene			0.100	0.08864		mg/Kg		89	70 - 130		
m-Xylene & p-Xylene			0.200	0.1728		mg/Kg		86	70 - 130		
o-Xylene			0.100	0.08598		mg/Kg		86	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*83*		*70 - 130*
1,4-Difluorobenzene (Surr)	*112*		*70 - 130*

Lab Sample ID: LCSD 880-30914/2-A
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30914

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1144		mg/Kg		114	70 - 130	10	35
Toluene			0.100	0.09687		mg/Kg		97	70 - 130	6	35
Ethylbenzene			0.100	0.09273		mg/Kg		93	70 - 130	5	35
m-Xylene & p-Xylene			0.200	0.1810		mg/Kg		91	70 - 130	5	35
o-Xylene			0.100	0.08961		mg/Kg		90	70 - 130	4	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*83*		*70 - 130*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*

Lab Sample ID: 880-17204-A-219-D MS
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30914

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U	0.101	0.09553		mg/Kg		94	70 - 130		
Toluene	0.00294		0.101	0.08456		mg/Kg		81	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2638-1
SDG: Eddy County NM

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

Lab Sample ID: 880-17204-A-219-D MS
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30914

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U	0.101	0.07943		mg/Kg		78	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.201	0.1536		mg/Kg		75	70 - 130
o-Xylene	<0.00201	U F1	0.101	0.07431		mg/Kg		73	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*
1,4-Difluorobenzene (Surr)	*114*		*70 - 130*

Lab Sample ID: 880-17204-A-219-E MSD
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 30914

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0990	0.09528		mg/Kg		95	70 - 130	0	35
Toluene	0.00294		0.0990	0.08036		mg/Kg		78	70 - 130	5	35
Ethylbenzene	<0.00201	U	0.0990	0.07361		mg/Kg		73	70 - 130	8	35
m-Xylene & p-Xylene	<0.00402	U	0.198	0.1413		mg/Kg		70	70 - 130	8	35
o-Xylene	<0.00201	U F1	0.0990	0.06848	F1	mg/Kg		69	70 - 130	8	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*79*		*70 - 130*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*

Lab Sample ID: MB 880-31025/5-A
Matrix: Solid
Analysis Batch: 31149

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31025

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/29/22 15:19	08/01/22 11:15	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/29/22 15:19	08/01/22 11:15	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/29/22 15:19	08/01/22 11:15	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/29/22 15:19	08/01/22 11:15	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/29/22 15:19	08/01/22 11:15	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/29/22 15:19	08/01/22 11:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*	*07/29/22 15:19*	*08/01/22 11:15*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*07/29/22 15:19*	*08/01/22 11:15*	*1*

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

Lab Sample ID: MB 880-30847/1-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/27/22 16:56	07/27/22 20:46	1

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2638-1
SDG: Eddy County NM

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

Lab Sample ID: MB 880-30847/1-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/27/22 16:56	07/27/22 20:46	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/27/22 16:56	07/27/22 20:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*07/27/22 16:56*	*07/27/22 20:46*	*1*
o-Terphenyl	*86*		*70 - 130*	*07/27/22 16:56*	*07/27/22 20:46*	*1*

Lab Sample ID: LCS 880-30847/2-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30847

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1034		mg/Kg		103	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1030		mg/Kg		103	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*103*		*70 - 130*
o-Terphenyl	*98*		*70 - 130*

Lab Sample ID: LCSD 880-30847/3-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30847

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	981.8		mg/Kg		98	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	1000	960.4		mg/Kg		96	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*97*		*70 - 130*
o-Terphenyl	*95*		*70 - 130*

Lab Sample ID: 890-2633-A-1-H MS
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30847

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	1047		mg/Kg		100	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U F1	1000	683.6	F1	mg/Kg		68	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*87*		*70 - 130*
o-Terphenyl	*75*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2638-1
SDG: Eddy County NM

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

Lab Sample ID: 890-2633-A-1-I MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 30743 — **Prep Batch: 30847**

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	999	1072		mg/Kg		103	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<50.0	U F1	999	696.8		mg/Kg		70	70 - 130	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*89*		*70 - 130*
o-Terphenyl	*75*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30679/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 30826

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			07/28/22 01:17	1

Lab Sample ID: LCS 880-30679/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 30826

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	261.5		mg/Kg		105	90 - 110

Lab Sample ID: LCSD 880-30679/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 30826

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	262.2		mg/Kg		105	90 - 110	0	20

Lab Sample ID: 890-2636-A-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 30826

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	68.7		252	316.7		mg/Kg		98	90 - 110

Lab Sample ID: 890-2636-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 30826

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	68.7		252	317.5		mg/Kg		99	90 - 110	0	20

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2638-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-2641-A-7-B MS
Matrix: Solid
Analysis Batch: 30826

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	153		249	394.0		mg/Kg		97	90 - 110		

Lab Sample ID: 890-2641-A-7-C MSD
Matrix: Solid
Analysis Batch: 30826

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	153		249	392.8		mg/Kg		96	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2638-1
SDG: Eddy County NM

GC VOA

Prep Batch: 30914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2638-1	SS02	Total/NA	Solid	5035	
MB 880-30914/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30914/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30914/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17204-A-219-D MS	Matrix Spike	Total/NA	Solid	5035	
880-17204-A-219-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 31025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31025/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 31149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2638-1	SS02	Total/NA	Solid	8021B	30914
MB 880-30914/5-A	Method Blank	Total/NA	Solid	8021B	30914
MB 880-31025/5-A	Method Blank	Total/NA	Solid	8021B	31025
LCS 880-30914/1-A	Lab Control Sample	Total/NA	Solid	8021B	30914
LCSD 880-30914/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30914
880-17204-A-219-D MS	Matrix Spike	Total/NA	Solid	8021B	30914
880-17204-A-219-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30914

Analysis Batch: 31317

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2638-1	SS02	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 30743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2638-1	SS02	Total/NA	Solid	8015B NM	30847
MB 880-30847/1-A	Method Blank	Total/NA	Solid	8015B NM	30847
LCS 880-30847/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30847
LCSD 880-30847/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30847
890-2633-A-1-H MS	Matrix Spike	Total/NA	Solid	8015B NM	30847
890-2633-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30847

Prep Batch: 30847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2638-1	SS02	Total/NA	Solid	8015NM Prep	
MB 880-30847/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30847/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30847/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2633-A-1-H MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2633-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 30876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2638-1	SS02	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2638-1
SDG: Eddy County NM

HPLC/IC

Leach Batch: 30679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2638-1	SS02	Soluble	Solid	DI Leach	
MB 880-30679/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30679/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30679/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2636-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2636-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-2641-A-7-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2641-A-7-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 30826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2638-1	SS02	Soluble	Solid	300.0	30679
MB 880-30679/1-A	Method Blank	Soluble	Solid	300.0	30679
LCS 880-30679/2-A	Lab Control Sample	Soluble	Solid	300.0	30679
LCSD 880-30679/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30679
890-2636-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	30679
890-2636-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30679
890-2641-A-7-B MS	Matrix Spike	Soluble	Solid	300.0	30679
890-2641-A-7-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30679

Lab Chronicle

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2638-1
SDG: Eddy County NM

Client Sample ID: SS02

Date Collected: 07/22/22 08:20
Date Received: 07/22/22 14:28

Lab Sample ID: 890-2638-1

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	30914	07/28/22 10:44	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31149	08/02/22 05:57	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			31317	08/02/22 12:18	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30876	07/28/22 09:08	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30847	07/27/22 16:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30743	07/28/22 00:56	SM	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	30679	07/26/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30826	07/28/22 02:12	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: BEU 160

Job ID: 890-2638-1
SDG: Eddy County NM

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: BEU 160

Job ID: 890-2638-1
SDG: Eddy County NM

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: BEU 160

Job ID: 890-2638-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2638-1	SS02	Solid	07/22/22 08:20	07/22/22 14:28	0.5

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Chain of Custody

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

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Work Order No: _____

Page 1 of 1

Project Manager:	Tacoma Morrissey	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	Company Name:	XTO Energy, Inc.
Address:	3122 National Parks Hwy.	Address:	3104 E. Green Street
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	3372578307	Email:	tmorrissey@ensolum.com

Work Order Comments

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

Project Name:	BEU 160	**Turn Around**	
Project Number:	03E1558083	☑ Routine ☐ Rush	
Project Location:	Eddy County, NM	Due Date:	
Sampler's Name:	LC	TAT starts the day received by the lab, if received by 4:30pm	
PO #:	N/A		

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Samples Received Intact:	(Yes) No	Thermometer ID:	TWM007	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	8.2	
Total Containers:		Corrected Temperature:	8.0	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
SS02	S	7/22/2022	820	0.5	Comp	1		x	x	x

890-2638 Chain of Custody

Preservative Codes

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

Sample Comments

Incident ID: napp2215848746

Cost Center: 1138731001

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		7.22.22 1428			
3			4		
5			6		

Revised Date 08/25/2020 Rev. 2020 2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2638-1
SDG Number: Eddy County NM

Login Number: 2638
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: 890-2638-1
SDG Number: Eddy County NM

Login Number: 2638
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 07/26/22 10:50 AM

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

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-2639-1
Laboratory Sample Delivery Group: Eddy County NM
Client Project/Site: BEU 160

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

Attn: Tacoma Morrissey

JKramer

Authorized for release by:
8/4/2022 3:27:49 PM

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

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

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

Client: Ensolum
Project/Site: BEU 160

Laboratory Job ID: 890-2639-1
SDG: Eddy County NM

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2639-1
SDG: Eddy County NM

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2639-1
SDG: Eddy County NM

Job ID: 890-2639-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2639-1

Receipt
The sample was received on 7/22/2022 2:28 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 8.0°C

GC VOA
Method 8021B: The following sample was diluted due to the nature of the sample matrix: SS01 (890-2639-1). Elevated reporting limits (RLs) are provided.

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

GC Semi VOA
Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: SS01 (890-2639-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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: BEU 160

Job ID: 890-2639-1
SDG: Eddy County NM

Client Sample ID: SS01

Date Collected: 07/22/22 08:15
Date Received: 07/22/22 14:28
Sample Depth: 0.5

Lab Sample ID: 890-2639-1

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0200	U	0.0200		mg/Kg		08/04/22 08:51	08/04/22 12:57	10
Toluene	<0.0200	U	0.0200		mg/Kg		08/04/22 08:51	08/04/22 12:57	10
Ethylbenzene	<0.0200	U	0.0200		mg/Kg		08/04/22 08:51	08/04/22 12:57	10
m-Xylene & p-Xylene	<0.0401	U	0.0401		mg/Kg		08/04/22 08:51	08/04/22 12:57	10
o-Xylene	<0.0200	U	0.0200		mg/Kg		08/04/22 08:51	08/04/22 12:57	10
Xylenes, Total	<0.0401	U	0.0401		mg/Kg		08/04/22 08:51	08/04/22 12:57	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*	*08/04/22 08:51*	*08/04/22 12:57*	*10*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*08/04/22 08:51*	*08/04/22 12:57*	*10*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0401	U	0.0401		mg/Kg			08/04/22 16:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**19000**		249		mg/Kg			07/28/22 09:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**2800**		249		mg/Kg		07/27/22 16:56	07/28/22 07:20	5
Diesel Range Organics (Over C10-C28)	**16200**		249		mg/Kg		07/27/22 16:56	07/28/22 07:20	5
Oil Range Organics (Over C28-C36)	<249	U	249		mg/Kg		07/27/22 16:56	07/28/22 07:20	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*188*	*S1+*	*70 - 130*	*07/27/22 16:56*	*07/28/22 07:20*	*5*
o-Terphenyl	*96*		*70 - 130*	*07/27/22 16:56*	*07/28/22 07:20*	*5*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**47.5**		5.00		mg/Kg			07/28/22 02:20	1

Surrogate Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2639-1
SDG: Eddy County NM

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)
890-2639-1	SS01	111	99
LCS 880-31465/1-A	Lab Control Sample	103	94
LCSD 880-31465/2-A	Lab Control Sample Dup	106	97
MB 880-31465/5-A	Method Blank	100	91

Surrogate Legend

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

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-2639-1	SS01	188 S1+	96
LCS 880-30847/2-A	Lab Control Sample	103	98
LCSD 880-30847/3-A	Lab Control Sample Dup	97	95
MB 880-30847/1-A	Method Blank	90	86

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2639-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31465/5-A
Matrix: Solid
Analysis Batch: 31452

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31465

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/04/22 08:51	08/04/22 10:53	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/04/22 08:51	08/04/22 10:53	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/04/22 08:51	08/04/22 10:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/04/22 08:51	08/04/22 10:53	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/04/22 08:51	08/04/22 10:53	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/04/22 08:51	08/04/22 10:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*08/04/22 08:51*	*08/04/22 10:53*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*08/04/22 08:51*	*08/04/22 10:53*	*1*

Lab Sample ID: LCS 880-31465/1-A
Matrix: Solid
Analysis Batch: 31452

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 31465

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09988		mg/Kg		100	70 - 130		
Toluene			0.100	0.1006		mg/Kg		101	70 - 130		
Ethylbenzene			0.100	0.1038		mg/Kg		104	70 - 130		
m-Xylene & p-Xylene			0.200	0.2107		mg/Kg		105	70 - 130		
o-Xylene			0.100	0.1145		mg/Kg		114	70 - 130		

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

Lab Sample ID: LCSD 880-31465/2-A
Matrix: Solid
Analysis Batch: 31452

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 31465

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09085		mg/Kg		91	70 - 130	9	35
Toluene			0.100	0.08782		mg/Kg		88	70 - 130	14	35
Ethylbenzene			0.100	0.09053		mg/Kg		91	70 - 130	14	35
m-Xylene & p-Xylene			0.200	0.1832		mg/Kg		92	70 - 130	14	35
o-Xylene			0.100	0.1004		mg/Kg		100	70 - 130	13	35

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

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2639-1
SDG: Eddy County NM

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

Lab Sample ID: MB 880-30847/1-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/27/22 16:56	07/27/22 20:46	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/27/22 16:56	07/27/22 20:46	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/27/22 16:56	07/27/22 20:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*07/27/22 16:56*	*07/27/22 20:46*	*1*
o-Terphenyl	*86*		*70 - 130*	*07/27/22 16:56*	*07/27/22 20:46*	*1*

Lab Sample ID: LCS 880-30847/2-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30847

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1034		mg/Kg		103	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1030		mg/Kg		103	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*103*		*70 - 130*
o-Terphenyl	*98*		*70 - 130*

Lab Sample ID: LCSD 880-30847/3-A
Matrix: Solid
Analysis Batch: 30743

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30847

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	981.8		mg/Kg		98	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	1000	960.4		mg/Kg		96	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*97*		*70 - 130*
o-Terphenyl	*95*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30679/1-A
Matrix: Solid
Analysis Batch: 30826

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			07/28/22 01:17	1

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2639-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-30679/2-A
Matrix: Solid
Analysis Batch: 30826

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	261.5		mg/Kg		105	90 - 110

Lab Sample ID: LCSD 880-30679/3-A
Matrix: Solid
Analysis Batch: 30826

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	262.2		mg/Kg		105	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2639-1
SDG: Eddy County NM

GC VOA

Analysis Batch: 31452

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2639-1	SS01	Total/NA	Solid	8021B	31465
MB 880-31465/5-A	Method Blank	Total/NA	Solid	8021B	31465
LCS 880-31465/1-A	Lab Control Sample	Total/NA	Solid	8021B	31465
LCSD 880-31465/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31465

Prep Batch: 31465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2639-1	SS01	Total/NA	Solid	5035	
MB 880-31465/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31465/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31465/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 31513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2639-1	SS01	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 30743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2639-1	SS01	Total/NA	Solid	8015B NM	30847
MB 880-30847/1-A	Method Blank	Total/NA	Solid	8015B NM	30847
LCS 880-30847/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30847
LCSD 880-30847/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30847

Prep Batch: 30847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2639-1	SS01	Total/NA	Solid	8015NM Prep	
MB 880-30847/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30847/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30847/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 30879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2639-1	SS01	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 30679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2639-1	SS01	Soluble	Solid	DI Leach	
MB 880-30679/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30679/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30679/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 30826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2639-1	SS01	Soluble	Solid	300.0	30679
MB 880-30679/1-A	Method Blank	Soluble	Solid	300.0	30679
LCS 880-30679/2-A	Lab Control Sample	Soluble	Solid	300.0	30679
LCSD 880-30679/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30679

Lab Chronicle

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2639-1
SDG: Eddy County NM

Client Sample ID: SS01

Date Collected: 07/22/22 08:15
Date Received: 07/22/22 14:28

Lab Sample ID: 890-2639-1

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	31465	08/04/22 08:51	MR	EETSC MID
Total/NA	Analysis	8021B		10	5 mL	5 mL	31452	08/04/22 12:57	MR	EETSC MID
Total/NA	Analysis	Total BTEX		1			31513	08/04/22 16:11	SM	EETSC MID
Total/NA	Analysis	8015 NM		1			30879	07/28/22 09:08	SM	EETSC MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	30847	07/27/22 16:56	DM	EETSC MID
Total/NA	Analysis	8015B NM		5			30743	07/28/22 07:20	SM	EETSC MID
Soluble	Leach	DI Leach			5 g	50 mL	30679	07/26/22 11:04	CH	EETSC MID
Soluble	Analysis	300.0		1			30826	07/28/22 02:20	CH	EETSC MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2639-1
SDG: Eddy County NM

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: BEU 160

Job ID: 890-2639-1
SDG: Eddy County NM

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

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

Sample Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2639-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2639-1	SS01	Solid	07/22/22 08:15	07/22/22 14:28	0.5

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Chain of Custody

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

Work Order No: _____

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Project Manager:	Tacoma Morrissey	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	Company Name:	XTO Energy, Inc.
Address:	3122 National Parks Hwy.	Address:	3104 E. Green Street
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	3372578307	Email:	tmorrissey@ensolum.com

Work Order Comments

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

Project Name:	BEU 160	**Turn Around**	
Project Number:	03E1558083	☑ Routine ☐ Rush	
Project Location:	Eddy County, NM	Due Date:	
Sampler's Name:	LC	TAT starts the day received by the lab, if received by 4:30pm	
PO #:	N/A		

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	TWM-037	
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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
SS01	S	7/22/2022	815	0.5	Comp	1		x	x	x

890-2639 Chain of Custody

Preservative Codes

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

Sample Comments

Incident ID: napp2215848746

Cost Center: 1138731001

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			7.22.22 1423			
3				4		
5				6		

Revised Date 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2639-1
SDG Number: Eddy County NM

Login Number: 2639
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: 890-2639-1
SDG Number: Eddy County NM

Login Number: 2639
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 07/26/22 10:50 AM

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

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-2776-1
Laboratory Sample Delivery Group: 30-015-36289
Client Project/Site: BEU 160

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

Attn: Tacoma Morrissey

JKramer

Authorized for release by:
8/22/2022 4:53:07 PM

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

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

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

Client: Ensolum
Project/Site: BEU 160

Laboratory Job ID: 890-2776-1
SDG: 30-015-36289

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2776-1
SDG: 30-015-36289

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.
S1-	Surrogate recovery exceeds control limits, low 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: BEU 160

Job ID: 890-2776-1
SDG: 30-015-36289

Job ID: 890-2776-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2776-1

Receipt
The sample was received on 8/17/2022 4:36 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 18.2°C

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

GC Semi VOA
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: FS01 (890-2776-1), (890-2762-A-1-C MS) and (890-2762-A-1-D MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-32455 and analytical batch 880-32464 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: BEU 160

Job ID: 890-2776-1
SDG: 30-015-36289

Client Sample ID: FS01

Date Collected: 08/17/22 14:50
Date Received: 08/17/22 16:36
Sample Depth: 1.5

Lab Sample ID: 890-2776-1

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		08/20/22 11:38	08/21/22 23:18	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/20/22 11:38	08/21/22 23:18	1
Ethylbenzene	**0.00513**		0.00200		mg/Kg		08/20/22 11:38	08/21/22 23:18	1
m-Xylene & p-Xylene	**0.0307**		0.00399		mg/Kg		08/20/22 11:38	08/21/22 23:18	1
o-Xylene	**0.00887**		0.00200		mg/Kg		08/20/22 11:38	08/21/22 23:18	1
Xylenes, Total	**0.0396**		0.00399		mg/Kg		08/20/22 11:38	08/21/22 23:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*121*		*70 - 130*	*08/20/22 11:38*	*08/21/22 23:18*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*08/20/22 11:38*	*08/21/22 23:18*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0447**		0.00399		mg/Kg			08/22/22 09:08	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**175**		49.9		mg/Kg			08/22/22 13:19	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		08/19/22 08:31	08/19/22 12:36	1
Diesel Range Organics (Over C10-C28)	**175**		49.9		mg/Kg		08/19/22 08:31	08/19/22 12:36	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		08/19/22 08:31	08/19/22 12:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*69*	*S1-*	*70 - 130*	*08/19/22 08:31*	*08/19/22 12:36*	*1*
o-Terphenyl	*65*	*S1-*	*70 - 130*	*08/19/22 08:31*	*08/19/22 12:36*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**44.0**		4.98		mg/Kg			08/22/22 13:43	1

Surrogate Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2776-1
SDG: 30-015-36289

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)										
880-18370-A-1-E MS	Matrix Spike	106	103										
880-18370-A-1-F MSD	Matrix Spike Duplicate	89	107										
890-2776-1	FS01	121	92										
LCS 880-32563/1-A	Lab Control Sample	99	100										
LCSD 880-32563/2-A	Lab Control Sample Dup	104	92										
MB 880-32563/5-A	Method Blank	79	116										

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)										
890-2762-A-1-C MS	Matrix Spike	71	64 S1-										
890-2762-A-1-D MSD	Matrix Spike Duplicate	73	65 S1-										
890-2776-1	FS01	69 S1-	65 S1-										
LCS 880-32455/2-A	Lab Control Sample	125	119										
LCSD 880-32455/3-A	Lab Control Sample Dup	115	110										
MB 880-32455/1-A	Method Blank	75	78										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2776-1
SDG: 30-015-36289

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-32563/5-A
Matrix: Solid
Analysis Batch: 32572

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32563

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/20/22 11:38	08/21/22 15:32	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/20/22 11:38	08/21/22 15:32	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/20/22 11:38	08/21/22 15:32	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/20/22 11:38	08/21/22 15:32	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/20/22 11:38	08/21/22 15:32	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/20/22 11:38	08/21/22 15:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*79*		*70 - 130*	*08/20/22 11:38*	*08/21/22 15:32*	*1*
1,4-Difluorobenzene (Surr)	*116*		*70 - 130*	*08/20/22 11:38*	*08/21/22 15:32*	*1*

Lab Sample ID: LCS 880-32563/1-A
Matrix: Solid
Analysis Batch: 32572

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32563

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09971		mg/Kg		100	70 - 130		
Toluene			0.100	0.1070		mg/Kg		107	70 - 130		
Ethylbenzene			0.100	0.1078		mg/Kg		108	70 - 130		
m-Xylene & p-Xylene			0.200	0.2024		mg/Kg		101	70 - 130		
o-Xylene			0.100	0.1067		mg/Kg		107	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 880-32563/2-A
Matrix: Solid
Analysis Batch: 32572

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 32563

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09285		mg/Kg		93	70 - 130	7	35
Toluene			0.100	0.1090		mg/Kg		109	70 - 130	2	35
Ethylbenzene			0.100	0.1124		mg/Kg		112	70 - 130	4	35
m-Xylene & p-Xylene			0.200	0.2130		mg/Kg		107	70 - 130	5	35
o-Xylene			0.100	0.1138		mg/Kg		114	70 - 130	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: 880-18370-A-1-E MS
Matrix: Solid
Analysis Batch: 32572

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 32563

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00202	U	0.100	0.1048		mg/Kg		105	70 - 130		
Toluene	<0.00202	U	0.100	0.1118		mg/Kg		112	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2776-1
SDG: 30-015-36289

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

Lab Sample ID: 880-18370-A-1-E MS
Matrix: Solid
Analysis Batch: 32572

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 32563

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00202	U	0.100	0.1133		mg/Kg		113	70 - 130
m-Xylene & p-Xylene	<0.00403	U	0.200	0.2117		mg/Kg		106	70 - 130
o-Xylene	<0.00202	U	0.100	0.1129		mg/Kg		113	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: 880-18370-A-1-F MSD
Matrix: Solid
Analysis Batch: 32572

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 32563

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U	0.0998	0.1101		mg/Kg		110	70 - 130	5	35
Toluene	<0.00202	U	0.0998	0.09787		mg/Kg		98	70 - 130	13	35
Ethylbenzene	<0.00202	U	0.0998	0.09376		mg/Kg		94	70 - 130	19	35
m-Xylene & p-Xylene	<0.00403	U	0.200	0.1707		mg/Kg		86	70 - 130	21	35
o-Xylene	<0.00202	U	0.0998	0.09050		mg/Kg		91	70 - 130	22	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

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

Lab Sample ID: MB 880-32455/1-A
Matrix: Solid
Analysis Batch: 32464

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32455

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		08/19/22 08:31	08/19/22 10:24	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		08/19/22 08:31	08/19/22 10:24	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		08/19/22 08:31	08/19/22 10:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*75*		*70 - 130*	*08/19/22 08:31*	*08/19/22 10:24*	*1*
o-Terphenyl	*78*		*70 - 130*	*08/19/22 08:31*	*08/19/22 10:24*	*1*

Lab Sample ID: LCS 880-32455/2-A
Matrix: Solid
Analysis Batch: 32464

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32455

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	1076		mg/Kg		108	70 - 130
Diesel Range Organics (Over C10-C28)			1000	1125		mg/Kg		112	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2776-1
SDG: 30-015-36289

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

Lab Sample ID: LCS 880-32455/2-A
Matrix: Solid
Analysis Batch: 32464

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32455

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	125		70 - 130
o-Terphenyl	119		70 - 130

Lab Sample ID: LCSD 880-32455/3-A
Matrix: Solid
Analysis Batch: 32464

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 32455

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	948.4		mg/Kg		95	70 - 130	13	20
Diesel Range Organics (Over C10-C28)			1000	1029		mg/Kg		103	70 - 130	9	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	115		70 - 130
o-Terphenyl	110		70 - 130

Lab Sample ID: 890-2762-A-1-C MS
Matrix: Solid
Analysis Batch: 32464

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 32455

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	999	775.5		mg/Kg		76	70 - 130		
Diesel Range Organics (Over C10-C28)	55.1	F1	999	630.8	F1	mg/Kg		58	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	71		70 - 130
o-Terphenyl	64	S1-	70 - 130

Lab Sample ID: 890-2762-A-1-D MSD
Matrix: Solid
Analysis Batch: 32464

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 32455

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	998	788.9		mg/Kg		77	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	55.1	F1	998	642.7	F1	mg/Kg		59	70 - 130	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	73		70 - 130
o-Terphenyl	65	S1-	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2776-1
SDG: 30-015-36289

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-32510/1-A
Matrix: Solid
Analysis Batch: 32655

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			08/22/22 11:34	1

Lab Sample ID: LCS 880-32510/2-A
Matrix: Solid
Analysis Batch: 32655

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	227.3		mg/Kg		91	90 - 110		

Lab Sample ID: LCSD 880-32510/3-A
Matrix: Solid
Analysis Batch: 32655

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	227.2		mg/Kg		91	90 - 110	0	20

Lab Sample ID: 890-2779-A-1-B MS
Matrix: Solid
Analysis Batch: 32655

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	210		252	448.8		mg/Kg		95	90 - 110		

Lab Sample ID: 890-2779-A-1-C MSD
Matrix: Solid
Analysis Batch: 32655

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	210		252	450.0		mg/Kg		95	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2776-1
SDG: 30-015-36289

GC VOA

Prep Batch: 32563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2776-1	FS01	Total/NA	Solid	5035	
MB 880-32563/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-32563/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-32563/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-18370-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
880-18370-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 32572

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2776-1	FS01	Total/NA	Solid	8021B	32563
MB 880-32563/5-A	Method Blank	Total/NA	Solid	8021B	32563
LCS 880-32563/1-A	Lab Control Sample	Total/NA	Solid	8021B	32563
LCSD 880-32563/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	32563
880-18370-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	32563
880-18370-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	32563

Analysis Batch: 32597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2776-1	FS01	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 32455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2776-1	FS01	Total/NA	Solid	8015NM Prep	
MB 880-32455/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-32455/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-32455/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2762-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2762-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 32464

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2776-1	FS01	Total/NA	Solid	8015B NM	32455
MB 880-32455/1-A	Method Blank	Total/NA	Solid	8015B NM	32455
LCS 880-32455/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	32455
LCSD 880-32455/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	32455
890-2762-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	32455
890-2762-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	32455

Analysis Batch: 32657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2776-1	FS01	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 32510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2776-1	FS01	Soluble	Solid	DI Leach	
MB 880-32510/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-32510/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-32510/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2776-1
SDG: 30-015-36289

HPLC/IC (Continued)

Leach Batch: 32510 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2779-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2779-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 32655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2776-1	FS01	Soluble	Solid	300.0	32510
MB 880-32510/1-A	Method Blank	Soluble	Solid	300.0	32510
LCS 880-32510/2-A	Lab Control Sample	Soluble	Solid	300.0	32510
LCSD 880-32510/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	32510
890-2779-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	32510
890-2779-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	32510

Lab Chronicle

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2776-1
SDG: 30-015-36289

Client Sample ID: FS01
Date Collected: 08/17/22 14:50
Date Received: 08/17/22 16:36

Lab Sample ID: 890-2776-1
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	32563	08/20/22 11:38	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32572	08/21/22 23:18	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32597	08/22/22 09:08	SM	EET MID
Total/NA	Analysis	8015 NM		1			32657	08/22/22 13:19	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	32455	08/19/22 08:31	DM	EET MID
Total/NA	Analysis	8015B NM		1			32464	08/19/22 12:36	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	32510	08/19/22 12:50	SMC	EET MID
Soluble	Analysis	300.0		1			32655	08/22/22 13:43	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2776-1
SDG: 30-015-36289

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: BEU 160

Job ID: 890-2776-1
SDG: 30-015-36289

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: BEU 160

Job ID: 890-2776-1
SDG: 30-015-36289

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2776-1	FS01	Solid	08/17/22 14:50	08/17/22 16:36	1.5

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:	Tacoma Morrissey	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy, Inc
Address:	3122 National Parks Highway	Address:	3104 E. Green Street
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	337-257-8307 Email:		tmorrissey@ensolum.com

Work Order Comments

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

Project Name:	BEU 160	Turn Around	
Project Number:	30-015-36289	☑ Routine ☐ Rush	
Project Location:	32.41194, -104.07852	Due Date:	
Sampler's Name:	Meredith Roberts	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:	18.4
Total Containers:		Corrected Temperature:	18.2

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	TAT	BTEX	TPH	Chloride
FS01	S	8/17	14:50	1.5'	C	1		x	x	x	x

ANALYSIS REQUEST

890-2776 Chain of Custody

Preservative Codes

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

Sample Comments

Incident ID: nAPP2215848746

Cost Center: 1138731001

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		8-17-22 12:36			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2776-1
SDG Number: 30-015-36289

Login Number: 2776
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: 890-2776-1
SDG Number: 30-015-36289

Login Number: 2776
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 08/19/22 10:36 AM

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

ENSOLUM

APPENDIX D

NMOCD Notifications

Collins, Melanie

From: Green, Garrett J
Sent: Thursday, June 2, 2022 2:09 PM
To: Bratcher, Mike, EMNRD; Hamlet, Robert, EMNRD; ocd.enviro@state.nm.us
Cc: DelawareSpills /SM
Subject: XTO 24 Hour notification - BEU 160 Released on - 6/1/2022

All,

This is notification of a release greater than 25 barrels that occurred yesterday at the BEU 160 near the GPS coordinates given below. Most 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: 32.41194,-104.07852

Thank you,

Garrett Green
Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

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

From: Green, Garrett J
To: Tacoma Morrissey
Subject: FW: XTO 48 Hour Liner Inspection Notification - BEU 160 Released on 6-1-22
Date: Tuesday, July 19, 2022 4:41:22 PM

[**EXTERNAL EMAIL**]

From: Green, Garrett J
Sent: Tuesday, July 19, 2022 3:06 PM
To: 'ocd.enviro@state.nm.us' <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>; 'Morrissey, Tacoma' <Tacoma.Morrissey@wsp.com>
Subject: XTO 48 Hour Liner Inspection Notification - BEU 160 Released on 6-1-22

Good afternoon,

This is sent as a 48-hour notification, XTO is scheduled to inspect the lined containment at BEU 160 released on (6/1/2022), on Friday, July 22, 2022 at 9AM MST. A 24 hour release notification was sent out on Thursday, June 2, 2022 2:09 PM since the release was greater than 25 barrels in volume. Please call us with any questions or concerns.

GPS Coordinates: (32.41194,-104.07852)

Thank you,

Garrett Green
Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

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

From: Green, Garrett J
To: ocd.enviro@state.nm.us; mike.bratcher@state.nm.us; Hamlet, Robert, EMNRD
Cc: DelawareSpills /SM; Tacoma Morrissey
Subject: XTO - Sampling Notification (Week of 8/15/22 - 8/19/22)
Date: Friday, August 12, 2022 1:13:53 PM

[**EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the following sites the week of August 15, 2022.

Monday
- Corral Canyon Expansion/ NAPP2215951900
- JRU 10 / NAB1904653072& NAB1535754357

Tuesday
- Corral Canyon Expansion/ NAPP2215951900

Wednesday
- Corral Canyon Expansion/ NAPP2215951900

Thursday
- BEU 160 Battery/ NAPP2215848746

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 139379

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 139379
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	9/1/2022