

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	nAPP2333240255
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 32.412360 Longitude -104.064507  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Big Eddy Unit 156 CS	Site Type	Compressor Station
Date Release Discovered	11/17/2023	API#	(if applicable)

Unit Letter	Section	Township	Range	County
D	11	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)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 4.55	Volume Recovered (bbls) 4.55
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input checked="" type="checkbox"/> Other (describe) Pegasus 805 Ultra	Volume/Weight Released (provide units) 4.55	Volume/Weight Recovered (provide units) 4.55


Cause of Release  
An electric pump on the sump going to tanks malfunctioned, releasing fluids into lined impermeable containment. All fluids were recovere. A 48-hour advance liner inspeption notice was sent to NMOCD District 2. Liner was visually inspected and determined to not be operating as designed. A third-party contractor has been retained for remediation purposes.

Incident ID	nAPP2333240255
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

## Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> 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: Environmental Coordinator
Signature: 	Date: 11/28/2023
email: garrett.green@exxonmobil.com	Telephone: 575-200-0729
<b><u>OCD Only</u></b>  Received by: _____ Date: _____	

<b>Location:</b>	<b>BEU 156 Compressor Station</b>	
<b>Spill Date:</b>	<b>11/17/2023</b>	
<b>Area 1</b>		
Approximate Area =	51.09	cu.ft.
VOLUME OF LEAK		
Total Oil =	4.55	bbls
Total Produced Water =	4.55	bbls
<b>TOTAL VOLUME OF LEAK</b>		
Total Oil =	4.55	bbls
Total Produced Water =	4.55	bbls
<b>TOTAL VOLUME RECOVERED</b>		
Total Oil =	4.55	bbls
Total Produced Water =	4.55	bbls



February 15, 2024

**New Mexico Oil Conservation Division**

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

**Re: Closure Request  
Big Eddy Unit 156 CS  
Incident Number NAPP2333240255  
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum) on behalf of XTO Energy, Inc. (XTO), has prepared this *Closure Request* to document site assessment and soil sampling activities performed at the Big Eddy Unit 156 Compressor Station (CS; Site). The purpose of the site assessment and soil sampling activities was to assess for the presence or absence of impacts to soil resulting from a release, which occurred within a lined containment, of produced water and a base oil with additives, specifically Mobil Pegasus 805. Based on field observations, field screening activities, and laboratory analytical results, XTO is submitting this *Closure Request* and requesting closure for Incident Number NAPP2333240255.

**SITE DESCRIPTION AND RELEASE SUMMARY**

The Site is located in Unit D, Section 11, Township 22 South, Range 28 East, in Eddy County, New Mexico (32.41236°, -104.06451°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On November 17, 2023, the electric sump pump running to the tanks malfunctioned, causing a release of approximately 4.55 barrels (bbls) of produced water and 4.55 bbls of Mobil Pegasus 805, a base oil with additives, into a lined tank battery containment. A vacuum truck was immediately dispatched to the Site to recover the free-standing fluids and all released fluids were recovered. A 48-hour advance notice of liner inspection was provided via email to the New Mexico Oil Conservation Division (NMOCD) District II office. A liner integrity inspection was conducted by XTO personnel following the fluid recovery and upon inspection, it was determined that the liner was not operating as designed. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification Form C-141 (Form C-141) on November 28, 2023, and the release was assigned Incident Number NAPP2333240255.

**SITE CHARACTERIZATION AND CLOSURE CRITERIA**

The Site was characterized to assess the applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are discussed below.

Depth to groundwater at the Site is estimated to be greater than 51 feet below ground surface (bgs) based on four soil borings drilled for investigation of impacted soil from a December 2011 produced water and crude oil release (Incident Number nMLB1135446814). The soil borings were permitted through the New Mexico Office of the State Engineer (OSE file number C-3533, POD-1 through POD-

4) and were all located approximately 0.45 to 0.47 miles northwest of the Site. All soil borings were advanced to a total depth of 55 feet bgs. The depth to water in the soil borings ranged from 48 feet to 53 feet bgs. Ground surface elevation at the soil borings location is approximately 3,140 feet above mean sea level (amsl), which is approximately 20 feet lower in elevation than the Site, therefore; groundwater is estimated to be greater than 51 feet bgs at the Site. The *Closure Request* was submitted to NMOCD on January 23, 2014, and was approved on August 27, 2014. The full report can be found on the NMOCD web portal. On March 6, 2012, the temporary monitoring wells were plugged and abandoned pursuant to OSE standards. The approved drilling permit is included in Appendix A of this report and the soil boring well logs can be found in Appendix A of the approved *Closure Request Report* for Incident Number nMLB1135446814.

The closest continuously flowing or significant watercourse to the Site is a freshwater emergent wetland, located approximately 765 feet northwest 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 I Closure Criteria (Closure Criteria) apply:

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

Because the release included Mobil Pegasus 805, a base oil with additives, the Safety Data Sheet (SDS) was reviewed to determine what additional constituents of concern (COCs), if any, should be assessed. According to the SDS, the Mobil Pegasus 805 includes hydro-treated petroleum distillates and hydrogen phosphorodithioates, which can be detected through analysis of TPH. As such, no additional COCs were assessed for this release. The SDS for Mobil Pegasus 805 is provided in Appendix B.

## SITE ASSESSMENT AND DELINEATION ACTIVITIES

Between January 10, and January 24, 2024, site assessment and delineation activities were conducted to evaluate the release extent based on information provided on the Form C-141 and visual observations. Ensolum personnel collected four delineation soil samples (SS01 through SS04) around the lined containment from a depth of approximately 0.5 feet bgs to confirm the release did not extend outside of the containment. Ensolum personnel advanced one borehole (BH01) via hand-auger at the location of the tear in the liner identified during the liner integrity inspection. Two discrete delineation soil samples were collected from the borehole at depths of approximately 0.5 feet and 1-foot bgs. The soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. Field screening results and observations from the borehole were documented on a lithologic/soil sampling log, which is included as Appendix C. The borehole was backfilled with the soil removed and XTO repaired the tear in the liner. The delineation soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was conducted during the Site visit. A photographic log is included in Appendix D.

XTO Energy, Inc  
Closure Request  
Big Eddy Unit 156 CS



The delineation soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of the following COCs: BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0. Soil samples delivered to the laboratory the same day they are collected may not have equilibrated to the 6 degrees Celcius required for shipment and long term storage, but are considered to have been received in acceptable condition by the laboratory.

## LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for all delineation soil samples indicated that all COC concentrations were compliant with the Closure Criteria and the reclamation requirement. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix E.

## CLOSURE REQUEST

Following the failed liner integrity inspection at the Site, Ensolum personnel advanced one borehole (BH01) at the location of the tear in the liner to assess for the presence or absence of impacted soil resulting from the November 17, 2023, produced water and Mobil Pegasus 805 release within a lined containment. The release was contained laterally by the lined containment as indicated by delineation soil sample results from SS01 through SS04 and all released fluids were recovered during initial response activities. The tear in the liner was subsequently repaired.

Based on delineation sample results, no remediation is necessary because no impacted soil as defined by Table I and no waste-containing soil as defined by the reclamation requirement was identified directly beneath the tear in the liner, as such XTO respectfully requests closure for Incident Number NAPP2333240255. During pad abandonment, XTO will complete activities to revegetate the area and will submit a revegetation report.

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

Sincerely,  
**Ensolum, LLC**

*Mariaha O'Dell*

Mariaha O'Dell  
Staff Geologist

*Ashley L. Ager*

Ashley L. Ager, M.S., P.G.  
Principal

cc: Garrett Green, XTO  
Tommee Lambert, XTO  
Bureau of Land Management

Appendices:

Figure 1 Site Receptor Map

XTO Energy, Inc  
Closure Request  
Big Eddy Unit 156 CS



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Figure 2	Delineation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Well Record and Log
Appendix B	Mobil Pegasus 805 Safety Data Sheet
Appendix C	Lithologic Soil Sampling Logs
Appendix D	Photographic Log
Appendix E	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix F	NMOCD Notifications



FIGURES



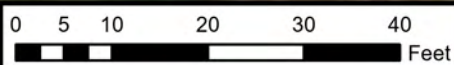
1

**Legend**

- Delineation Soil Sample in Compliance with Closure Criteria
- Lined Containment Area



Notes:  
 Sample ID @ Depth Below Ground Surface.  
 Grey text indicate soil sample was removed during excavation activities.



Sources: Environmental Systems Research Institute (ESRI)

**Delineation Soil Sample Locations**

XTO Energy, Inc  
 Big Eddy Unit 156 CS  
 Incident Number: nAPP2333240255  
 Unit D, Sec 11, T22S, R28E  
 Eddy Co, New Mexico, United States

**FIGURE**  
**2**



TABLES



**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
**Big Eddy Unit 156 CS**  
**XTO Energy, Inc**  
**Eddy County, New Mexico**

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	10,000
Delineation Soil Samples										
SS01	01/10/2024	0.5	<0.00199	<0.00398	<50.3	76.4	<50.3	76.4	76.4	11.4
SS02	01/10/2024	0.5	<0.00198	<0.00397	<49.8	<49.8	<49.8	<49.8	<49.8	25.9
SS03	01/10/2024	0.5	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	<4.98
SS04	01/10/2024	0.5	<0.00200	<0.00400	<50.4	<50.4	<50.4	<50.4	<50.4	8.23
BH01	01/24/2024	0.5	<0.00201	<0.00402	<50.3	56.1	<50.3	56.1	56.1	181
BH01A	01/24/2024	1	<0.00200	<0.00401	<50.3	67.3	<50.3	67.3	67.3	83.1

## Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in **bold** exceed the NMOCD Table I Closure Criteria or reclamation requirement where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NMAC: New Mexico Administrative Code



## APPENDIX A

### Referenced Well Records

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File No. C-3533

## NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL  
WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

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

2-30950 \$25

Purpose: ☐ Pollution Control And / Or Recovery ☐ Geo-Thermal  
☒ Exploratory ☐ Construction Site De-Watering ☐ Other (Describe):  
☐ Monitoring ☐ Mineral De-Watering

A separate permit will be required to apply water to beneficial use.

☒ Temporary Request - Requested Start Date: 2/1/12

Requested End Date: 3/1/12

Plugging Plan of Operations Submitted? ☒ Yes ☐ NoSTATE ENGINEER OFFICE  
ROSWELL, NEW MEXICO  
12017 FEB 10 A

## 1. APPLICANT(S)

Name: <del>Tony Savore</del> <b>Bopco L.P.</b>	Name: <b>U.S. Dept. of Interior - BLM</b>
Contact or Agent: check here if Agent <input type="checkbox"/> Contact: <b>Tony Savore</b>	Contact or Agent: check here if Agent <input type="checkbox"/> <b>James A. Amos</b>
Mailing Address: <b>522 W. Mermod, Suite 704</b>	Mailing Address: <b>620 East Greene Street</b>
City: <b>Carlsbad</b>	City: <b>Carlsbad</b>
State: <b>NM</b> Zip Code: <b>88220</b>	State: <b>NM</b> Zip Code: <b>88220-6292</b>
Phone: <b>432-556-8730</b> <input type="checkbox"/> Home <input checked="" type="checkbox"/> Cell Phone (Work): <b>575-887-7329</b>	Phone: <input type="checkbox"/> Home <input type="checkbox"/> Cell Phone (Work): <b>575-234-5909</b>
E-mail (optional): <b>tasavoie@basspet.com</b>	E-mail (optional): <b>James@blm.gov</b>

12017 FEB 10 A 10:37

STATE ENGINEER OFFICE  
ROSWELL, NEW MEXICO

FOR OSE INTERNAL USE

Application for Permit, Form wr-07, Rev 12/14/11

File Number: <b>C-3533</b>	Trn Number: <b>495091</b>
Trans Description (optional): <b>EXPL</b>	
Sub-Basin: <b>C</b>	
PCW/LOG Due Date: <b>02/28/2013</b>	

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

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84)			
<input type="checkbox"/> NM State Plane (NAD83) (Feet) <input type="checkbox"/> NM West Zone <input type="checkbox"/> NM East Zone <input type="checkbox"/> NM Central Zone		<input type="checkbox"/> UTM (NAD83) (Meters) <input type="checkbox"/> Zone 12N <input type="checkbox"/> Zone 13N	
		<input checked="" type="checkbox"/> Lat/Long (WGS84) (to the nearest 1/10 <sup>th</sup> of second)	
Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Optional: Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.
SITE A TMW-1 POD 1			N 32° 24' 57.81" W 104° 4' 14.63" NWSWSESE, Section 03, T.22S, R.28E
SITE A TMW-2 POD 2			N 32° 24' 57.85" W 104° 4' 15.38" NWSWSESE, Section 03, T.22S, R.28E
SITE A TMW-3 POD 3			N 32° 24' 57.07" W 104° 4' 14.92" NWSWSESE, Section 03, T.22S, R.28E
SITE A TMW-5 POD 4			N 32° 24' 56.48" W 104° 4' 16.43" SESESWSE, Section 03, T.22S, R.28E
NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 - POD Descriptions) Additional well descriptions are attached: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, how many _____ Other description relating well to common landmarks, streets, or other: U.L.P Section 3, Twns. 22S, Range 28E			
Well is on land owned by: BIm			
Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. Attached? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, how many <u>4</u>			
Approximate depth of well (feet): 55.00		Outside diameter of well casing (inches): 2.00	
Driller Name: Straub		Driller License Number: WD 1478	

## 3. ADDITIONAL STATEMENTS OR EXPLANATIONS

The bore holes at the Site <sup>A</sup> were drilled on 1/12/12 as vertical delineation points at a flow line spill area. A very salty water zone was encountered at a depth of approximately 55 ft. below ground surface. The soil bores were set up as temporary wells with 10 ft of 2" screen and a mesh filter sock. The NMOCD was notified of our findings. The water in the wells was sampled and developed over a period of about 2 weeks. The water elevation dropped on the average of about 2 ft. during that time frame. TMW-5 started out at approximately 2 ft. of water column and now has moist sediment in the well bore. On 2/8/12 the NMOCD agreed with our conclusion that the water encountered at 55 ft. was one of many naturally occurring salt water deposits.

2012 FEB 10 A 10:37  
STATE ENGINEER OFFICE  
ROSWELL, NEW MEXICO

FOR USE INTERNAL USE

Application for Permit, Form wr-07

File Number: C-3533

Trn Number: 495091

Page 2 of 3

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

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

### ACKNOWLEDGEMENT

I, We (name of applicant(s)), John A. "Tony" Savoie

Print Name(s)

James A. Amos (BLM-CFO)

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

Tony Savoie 2/10/12  
Applicant Signature

James A. Amos 2-10-12  
Applicant Signature

### ACTION OF THE STATE ENGINEER

This application is:

☒ approved

☐ partially approved

☐ denied

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

Witness my hand and seal this 16th day of February, 2012, for the State Engineer,

Scott A. Verhines, P.E.

State Engineer

By: Bill Duemling  
Signature

Bill Duemling

Print

Title: Carlsbad Basin Supervisor

Print

STATE ENGINEER OFFICE  
ROSSELL, NEW MEXICO  
1 2012 FEB 10 A 10 38

FOR USE INTERNAL USE

Application for Permit, Form wr-07

File Number:

C-3533

Trn Number:

495091

NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE

## SPECIFIC CONDITIONS OF APPROVAL

- 1A Depth of the well shall not exceed the thickness of the valley fill.
- 4 No water shall be appropriated and beneficially used under this permit.
- B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-12 New Mexico Statutes Annotated.
- C Driller's well record must be filed with the State Engineer within 20 days after the well is drilled or driven. Well record forms will be provided by the State Engineer upon request.
- LOG The Point of Diversion C 03533 POD1 must be completed and the Well Log filed on or before 02/28/2013.
- LOG The Point of Diversion C 03533 POD2 must be completed and the Well Log filed on or before 02/28/2013.
- LOG The Point of Diversion C 03533 POD3 must be completed and the Well Log filed on or before 02/28/2013.
- LOG The Point of Diversion C 03533 POD4 must be completed and the Well Log filed on or before 02/28/2013.

NO WATER SHALL BE DIVERTED FROM THESE WELLS EXCEPT FOR TESTING PURPOSES WHICH SHALL NOT EXCEED TEN (10) CUMULATIVE DAYS, AND WELLS SHALL BE PLUGGED OR CAPPED ON OR BEFORE 02/28/2013, UNLESS A PERMIT TO USE WATER FROM THESE WELLS IS ACQUIRED FROM THE OFFICE OF THE STATE ENGINEER.

THE WELLS SHALL BE CONSTRUCTED, MAINTAINED AND OPERATED THAT EACH WATER SHALL BE CONFINED TO THE AQUIFER IN WHICH IT IS ENCOUNTERED.

Trn Desc: C 03533-WATER QUALITY SAMPLINGFile Number: C 03533Trn Number: 495091

page: 1

ENV C

NO. 1

DATE

BY

SC. 1

NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE

By:

## ACTION OF STATE ENGINEER

Notice of Intention Rcvd:                      Date Rcvd. Corrected:  
Formal Application Rcvd: 02/10/2012      Pub. of Notice Ordered:  
Date Returned - Correction:                  Affidavit of Pub. Filed:

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

Witness my hand and seal this 16 day of Feb A.D., 2012

Scott A. Verhines, P.E., State Engineer

By:

Bill Duemling  
Bill Duemling, Basin Supv.

Trn Desc:

Trn Desc: C 03533-WATER QUALITY SAMPLINGFile Number: C 03533Trn Number: 495091

page: 2

### Locator Tool Report

**General Information:**

Application ID:30                      Date: 02-15-2012                      Time: 15:21:02

WR File Number: C-03533-POD1  
Purpose: POINT OF DIVERSION

Applicant First Name: BOPCO LLP  
Applicant Last Name: EXPLORATORY WELLS (POD ONE OF FOUR)

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

**Coordinate System Details:****Geographic Coordinates:**

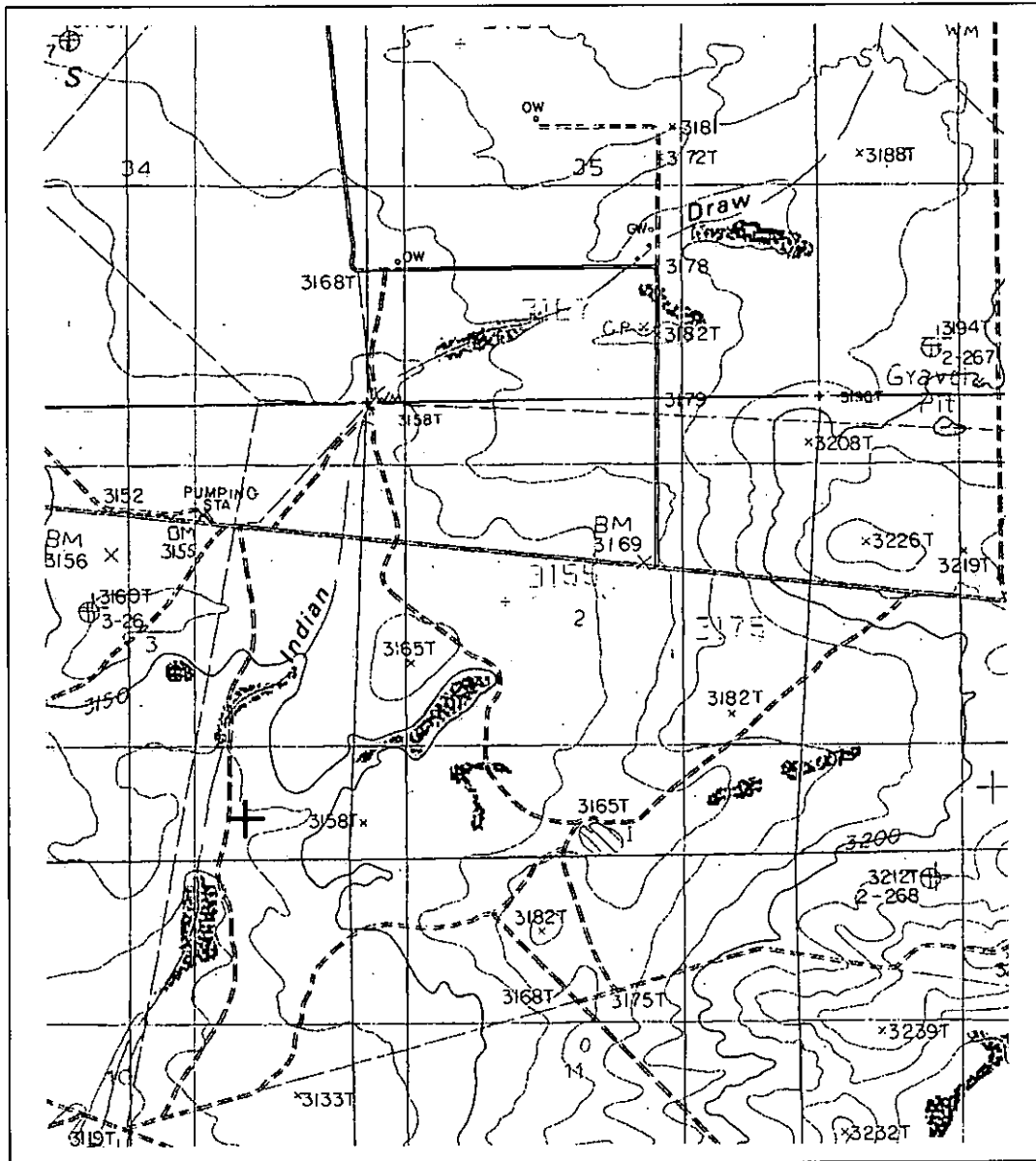
Latitude: 32 Degrees 24 Minutes 57.8 Seconds N  
Longitude: 104 Degrees 4 Minutes 14.6 Seconds W

**Universal Transverse Mercator Zone: 13N**

NAD 1983(92) (Meters)	N: 3,586,934	E: 587,377
NAD 1983(92) (Survey Feet)	N: 11,768,133	E: 1,927,087
NAD 1927 (Meters)	N: 3,586,732	E: 587,426
NAD 1927 (Survey Feet)	N: 11,767,470	E: 1,927,248

**State Plane Coordinate System Zone: New Mexico East**

NAD 1983(92) (Meters)	N: 157,031	E: 189,699
NAD 1983(92) (Survey Feet)	N: 515,193	E: 622,372
NAD 1927 (Meters)	N: 157,013	E: 177,147
NAD 1927 (Survey Feet)	N: 515,132	E: 581,190

**NEW MEXICO OFFICE OF STATE ENGINEER****Locator Tool Report**

WR File Number: C-03533-POD1 Scale: 1:26,394

Northing/Easting: UTM83(92) (Meter): N: 3,586,934 E: 587,377

Northing/Easting: SPCS83(92) (Feet): N: 515,193 E: 622,372

GW Basin: Carlsbad

## Locator Tool Report

### General Information:

Application ID:30                      Date: 02-15-2012                      Time: 15:23:34

WR File Number: C-03533-POD2  
Purpose: POINT OF DIVERSION

Applicant First Name: BOPCO LLP  
Applicant Last Name: EXPLORATORY WELLS (POD TWO OF FOUR)

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

### Coordinate System Details:

#### Geographic Coordinates:

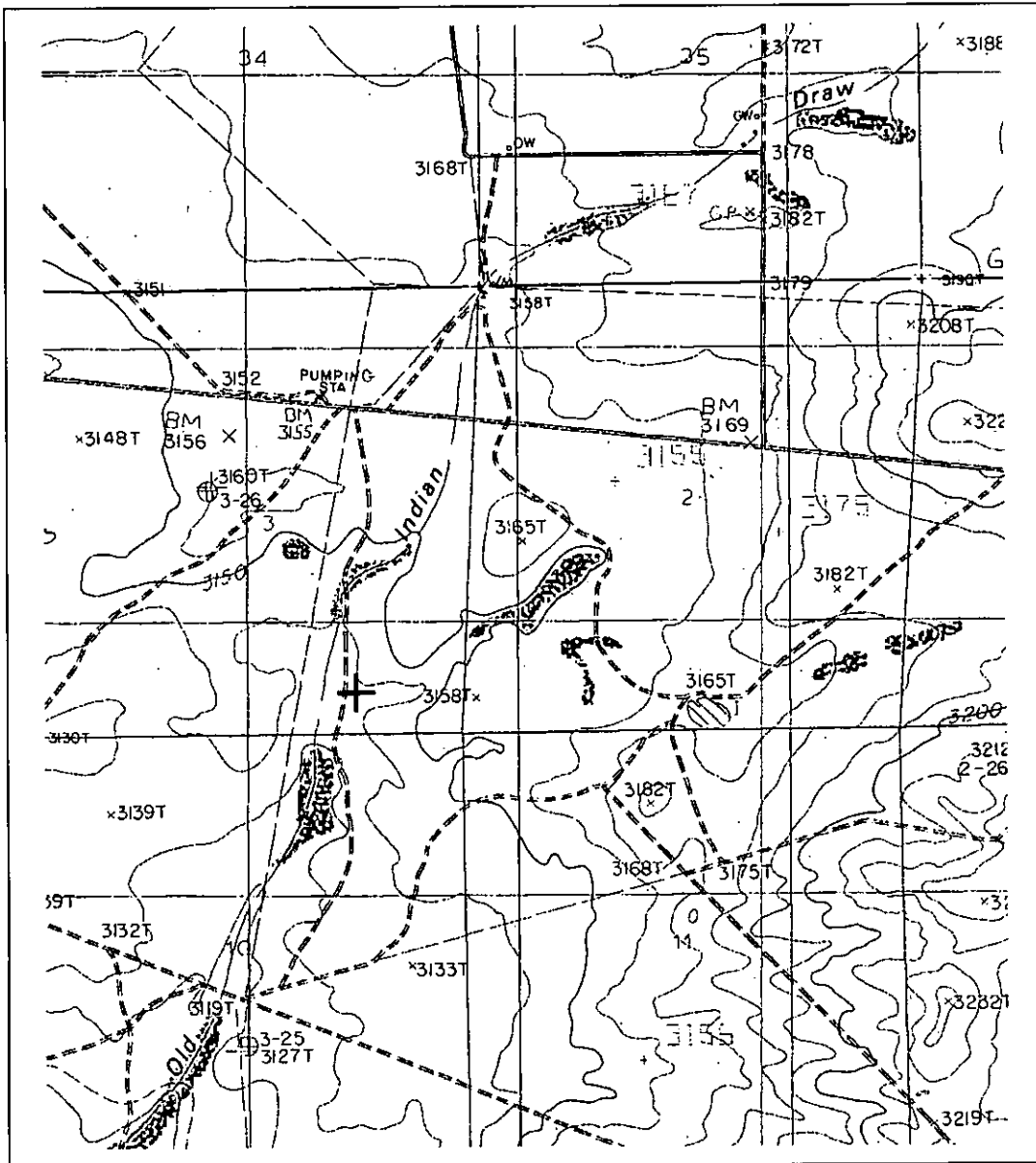
Latitude: 32 Degrees 24 Minutes 57.9 Seconds N  
Longitude: 104 Degrees 4 Minutes 15.4 Seconds W

#### Universal Transverse Mercator Zone: 13N

NAD 1983(92) (Meters)	N: 3,586,935	E: 587,358
NAD 1983(92) (Survey Feet)	N: 11,768,136	E: 1,927,023
NAD 1927 (Meters)	N: 3,586,733	E: 587,407
NAD 1927 (Survey Feet)	N: 11,767,473	E: 1,927,184

#### State Plane Coordinate System Zone: New Mexico East

NAD 1983(92) (Meters)	N: 157,032	E: 189,680
NAD 1983(92) (Survey Feet)	N: 515,197	E: 622,307
NAD 1927 (Meters)	N: 157,014	E: 177,127
NAD 1927 (Survey Feet)	N: 515,136	E: 581,126

**NEW MEXICO OFFICE OF STATE ENGINEER****Locator Tool Report**

WR File Number: C-03533-POD2 Scale: 1:26,992

Northing/Easting: UTM83(92) (Meter): N: 3,586,935 E: 587,358

Northing/Easting: SPCS83(92) (Feet): N: 515,197 E: 622,307

GW Basin: Carlsbad

### Locator Tool Report

**General Information:**

Application ID: 30                      Date: 02-15-2012                      Time: 15:25:13

WR File Number: C-03533-POD3  
Purpose: POINT OF DIVERSION

Applicant First Name: BOPCO LLP  
Applicant Last Name: EXPLORATORY WELLS (POD THREE OF FOUR)

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

**Coordinate System Details:****Geographic Coordinates:**

Latitude: 32 Degrees 24 Minutes 57.1 Seconds N  
Longitude: 104 Degrees 4 Minutes 14.9 Seconds W

**Universal Transverse Mercator Zone: 13N**

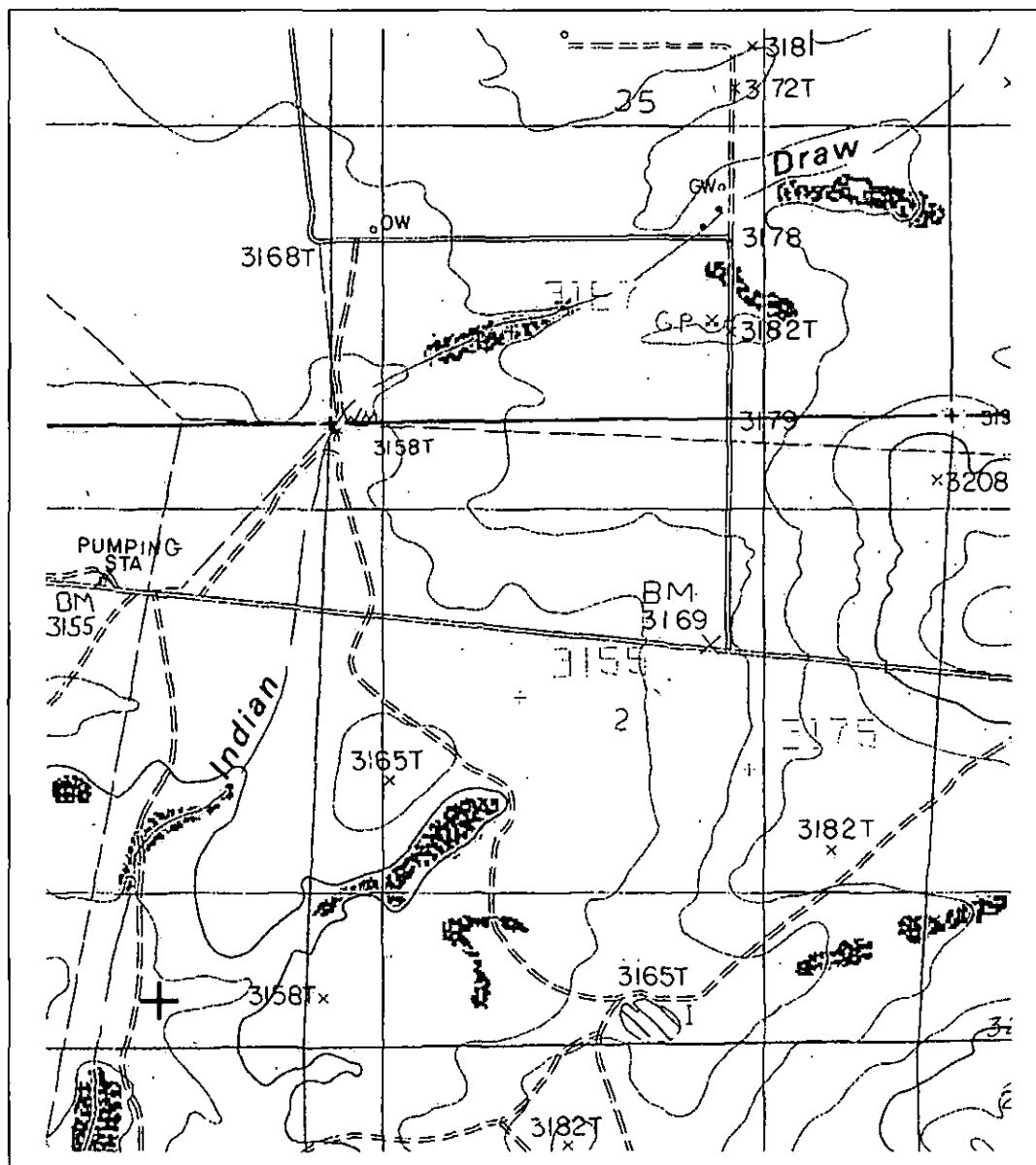
NAD 1983(92) (Meters)	N: 3,586,911	E: 587,370
NAD 1983(92) (Survey Feet)	N: 11,768,058	E: 1,927,063
NAD 1927 (Meters)	N: 3,586,709	E: 587,419
NAD 1927 (Survey Feet)	N: 11,767,395	E: 1,927,224

**State Plane Coordinate System Zone: New Mexico East**

NAD 1983(92) (Meters)	N: 157,008	E: 189,692
NAD 1983(92) (Survey Feet)	N: 515,118	E: 622,347
NAD 1927 (Meters)	N: 156,990	E: 177,140
NAD 1927 (Survey Feet)	N: 515,058	E: 581,165

**NEW MEXICO OFFICE OF STATE ENGINEER**

## Locator Tool Report



WR File Number: C-03533-POD3 Scale: 1:19,265

Northing/Easting: UTM83(92) (Meter): N: 3,586,911 E: 587,370

Northing/Easting: SPCS83(92) (Feet): N: 515,118 E: 622,347

GW Basin: Carlsbad

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Print Date: 02/15/2012

**Locator Tool Report**

**General Information:**

Application ID:30                      Date: 02-15-2012                      Time: 15:28:24

WR File Number: C-03533-POD4  
Purpose: POINT OF DIVERSION

Applicant First Name: BOPCO LLP  
Applicant Last Name: EXPLORATORY WELLS (POD FOUR OF FOUR)

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):**

SE 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:**

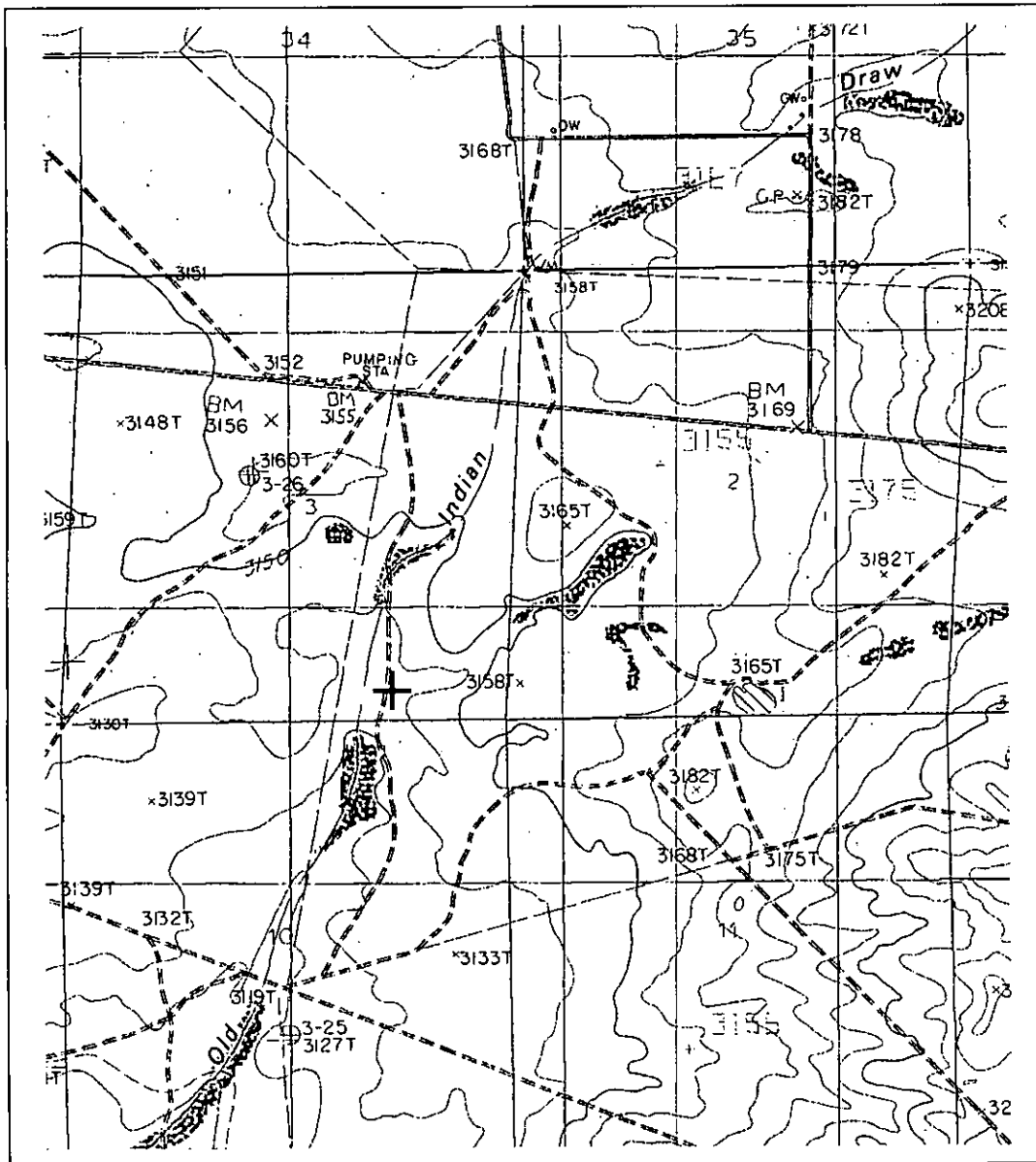
Latitude:        32 Degrees   24 Minutes   56.5 Seconds   N  
Longitude:      104 Degrees   4 Minutes   16.4 Seconds   W

**Universal Transverse Mercator Zone: 13N**

NAD 1983(92) (Meters)	N: 3,586,893	E: 587,331
NAD 1983(92) (Survey Feet)	N: 11,767,997	E: 1,926,934
NAD 1927 (Meters)	N: 3,586,691	E: 587,380
NAD 1927 (Survey Feet)	N: 11,767,334	E: 1,927,095

**State Plane Coordinate System Zone: New Mexico East**

NAD 1983(92) (Meters)	N: 156,990	E: 189,652
NAD 1983(92) (Survey Feet)	N: 515,058	E: 622,218
NAD 1927 (Meters)	N: 156,972	E: 177,100
NAD 1927 (Survey Feet)	N: 514,998	E: 581,036

**NEW MEXICO OFFICE OF STATE ENGINEER****Locator Tool Report**

WR File Number: C-03533-POD4 Scale: 1:26,818

Northing/Easting: UTM83(92) (Meter): N: 3,586,893

E: 587,331

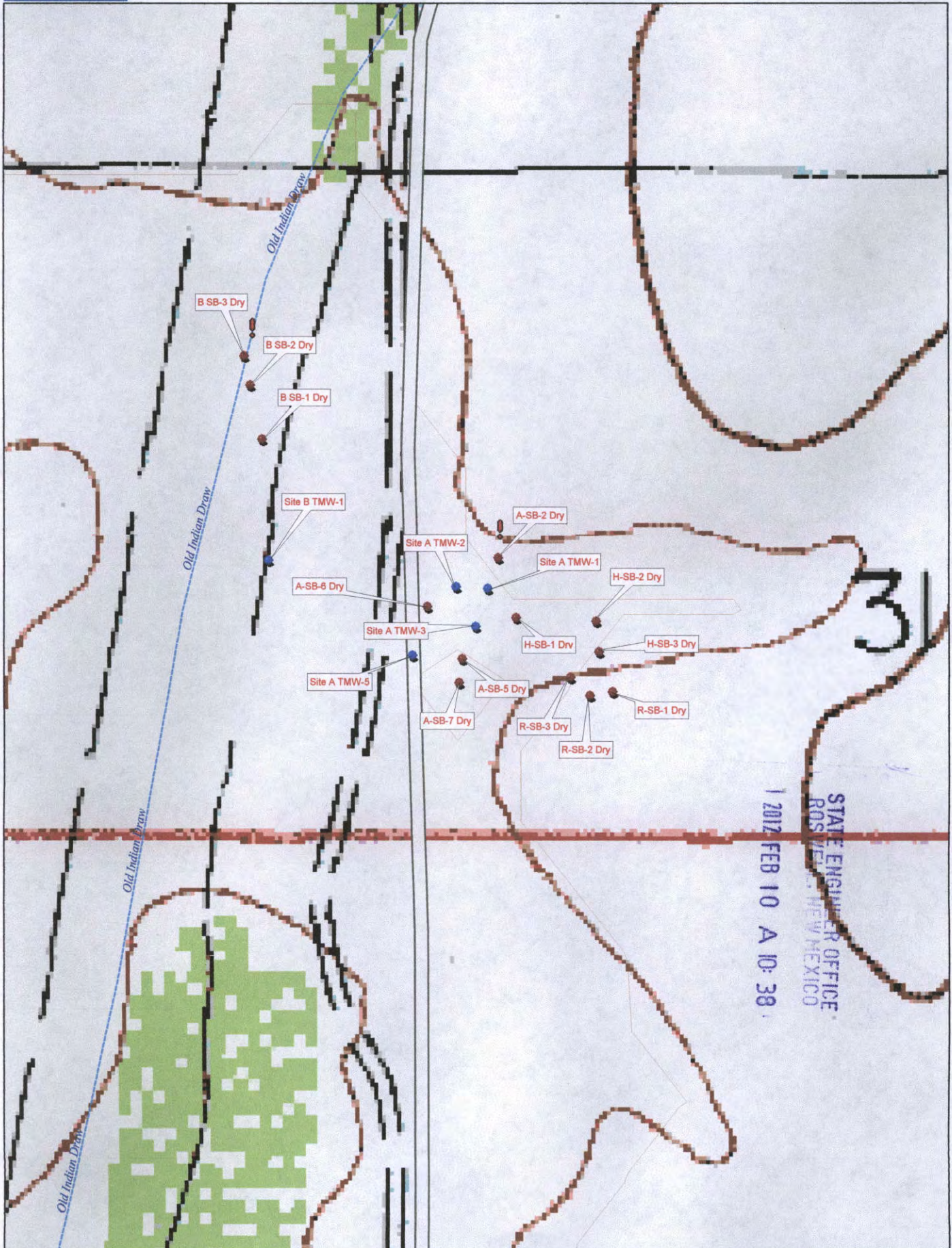
Northing/Easting: SPCS83(92) (Feet): N: 515,058

E: 622,218

GW Basin: Carlsbad

DeLORME

Topo North America™ 9



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www.delorme.com

## BOPCO L.P. BASS 3 FEDERAL #4 PROJECT

Site	Soil Bore	Temp. Well	Total Depth ft.	Water Column ft.	Status
A	SB-1	TMW-1	55.48	5.58	Temporary well, pending plugging.
A	SB-2		55	Dry	Bore was plugged with bentonite.
A	SB-3	TMW-2	54.95	4.6	Temporary well, pending plugging.
A	SB-4	TMW-3	54.95	5.5	Temporary well, pending plugging.
A	SB-5		55	Dry	Originally set as TMW-4 "dry Hole" plugged with bentonite
A	SB-6		55	Dry	Bore was plugged with bentonite.
A	SB-7		55	Dry	Bore was plugged with bentonite.
A	SB-8	TMW-5	54.95	0.25	Temporary well, pending plugging.
B	SB-1		40	Dry	Bore was plugged with bentonite
B	SB-2		60	Dry	Bore was plugged with bentonite
B	SB-3		110	Dry	Bore was plugged with bentonite
B	SB-4	TMW-1	147.86	42.27	Temporary well, pending permanent completion.
Site	Soil Bore	Lat Degrees	Long. Degrees		Degrees, Minutes, Seconds
A	SB-1	32.41606	104.07073		N32° 24' 57.81" W 104° 4' 14.63"
A	SB-2	32.41623	104.07066		N32° 24' 58.42" W 104° 4' 14.37"
A	SB-3	32.41607	104.07094		N32° 24' 57.85" W 104° 4' 15.38"
A	SB-4	32.41585	104.07081		N32° 24' 57.07" W 104° 4' 14.92"
A	SB-5	32.41567	104.0709		N32° 24' 56.42" W 104° 4' 15.24"
A	SB-6	32.41596	104.07113		N32° 24' 57.45" W 104° 4' 16.06"
A	SB-7	32.41554	104.07092		N32° 24' 55.94" W 104° 4' 15.31"
A	SB-8	32.41569	104.07123		N32° 24' 56.48" W 104° 4' 16.43"
B	SB-1	32.41688	104.07223		N32° 25' 0.80" W 104° 4' 20.02"
B	SB-2	32.41719	104.07231		N32° 25' 1.88" W 104° 4' 20.32"
B	SB-3	32.41735	104.07235		N32° 25' 2.47" W 104° 4' 20.45"
B	SB-4	32.416216	104.072189		N32° 24' 58.38" W 104° 4' 19.89"

### Temporary Well Plugging Plan

BOPCO L.P. will upon approval by the New Mexico Office Of The State Engineer plug the temporary wells at the remediation project know as the Bass 3 Federal #4 Site A. A licensed driller will remove the 2" pipe and screen from the bore. The bore will then be filled with bentonite, the bore will be gauged as the bentonite is poured and hydrated to assure a uniform seal from surface to total depth; the number of bags of bentonite used to plug the hole will be recorded and logged by the driller.

Tony Savoie  
Waste Management and Remediation Specialist.

STATE ENGINEER OFFICE  
ROSWELL, NEW MEXICO  
1 2017 FEB 10 A 10:38



Scott A. Verhines, P.E.  
State Engineer

Roswell Office  
1900 WEST SECOND STREET  
ROSWELL, NM 88201

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

Trn Nbr: 495091  
File Nbr: C 03533

Feb. 16, 2012

JAMES AMOS  
U.S. DEPT. OF INTERIOR--BLM  
620 EAST GREENE STREET  
CARLSBAD, NM 88220-6292


Greetings:

Enclosed is your copy of the above numbered permit that has been approved subject to the conditions set forth on the approval page. In accordance with the conditions of approval, the well can only be tested for 10 cumulative days, and the well is to be plugged on or before 02/28/2013, unless a permit to use the water is acquired from this office.

A Well Record & Log (OSE Form wr-20) shall be filed in this office within twenty (20) days after completion of drilling, but no later than 02/28/2013.

Appropriate forms can be downloaded from the OSE website [www.ose.state.nm.us](http://www.ose.state.nm.us) or will be mailed upon request.

Sincerely,

  
Bill Duemling  
(575) 622-6521

Enclosure

explore



## APPENDIX B

### Mobil Pegasus 805 Safety Data Sheet

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Product Name: MOBIL PEGASUS 805  
Revision Date: 26 Nov 2019  
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SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBIL PEGASUS 805  
Product Description: Base Oil and Additives  
Product Code: 201525106010, 602466-00, 97D936  
Intended Use: Natural gas engine oil

COMPANY IDENTIFICATION

Supplier: EXXON MOBIL CORPORATION  
22777 Springwoods Village Parkway  
Spring, TX 77389 USA  
24 Hour Health Emergency 609-737-4411  
Transportation Emergency Phone 800-424-9300 or 703-527-3887 CHEMTREC  
Product Technical Information 800-662-4525  
MSDS Internet Address www.exxon.com, www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health: 0	Flammability: 1	Reactivity: 0
HMIS Hazard ID:	Health: 0	Flammability: 1	Reactivity: 0



Product Name: MOBIL PEGASUS 805

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**NOTE:** This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

### SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

#### Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
2,5-FURANDIONE, DIHYDRO-, POLYBUTENYL DERIVS. REACTION PRODUCTS WITH TETRAETHYLENEPENTAMINE	68583-75-5	1 - < 5%	H413
2-PENTANOL, 4-METHYL-, HYDROGEN PHOSPHORODITHIOATE, ZINC SALT	2215-35-2	0.1 - < 1%	H303, H315, H318, H401, H411
BENZENE PROPANOIC ACID, 3,5-BIS(1,1-DIMETHYLETHYL)-4-HYDROXY-, C7-9 BRANCHED ALKYL ESTERS	125643-61-0	1 - < 5%	H413
BENZENE SULFONIC ACIDS, C10-16 ALKYL DERIVS., CA SALTS	68584-23-6	0.1 - < 1%	H317
BENZENESULFONIC ACID, MONO-C16-24-ALKYL DERIVS. CALCIUM SALTS	70024-69-0	0.1 - < 1%	H317
SULFONIC ACIDS, PETROLEUM, CALCIUM SALTS	61789-86-4	0.1 - < 1%	H317

\* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

### SECTION 4 FIRST AID MEASURES

#### INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

#### SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

#### EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

#### INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.



Product Name: MOBIL PEGASUS 805

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## SECTION 5 FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA

**Appropriate Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**Inappropriate Extinguishing Media:** Straight Streams of Water

### FIRE FIGHTING

**Fire Fighting Instructions:** Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

**Hazardous Combustion Products:** Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

### FLAMMABILITY PROPERTIES

**Flash Point [Method]:** >245°C (473°F) [ASTM D-92]

**Flammable Limits (Approximate volume % in air):** LEL: 0.9 UEL: 7.0

**Autoignition Temperature:** N/D

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

### PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.



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Revision Date: 26 Nov 2019

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## SPILL MANAGEMENT

**Land Spill:** Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

**Water Spill:** Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

## ENVIRONMENTAL PRECAUTIONS

**Large Spills:** Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

## SECTION 7

## HANDLING AND STORAGE

### HANDLING

Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

**Static Accumulator:** This material is a static accumulator.

### STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers.

## SECTION 8

## EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure limits/standards for materials that can be formed when handling this product:** When mists/aerosols can occur the following are recommended: 5 mg/m<sup>3</sup> - ACGIH TLV (inhalable fraction), 5 mg/m<sup>3</sup> - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

## ENGINEERING CONTROLS



Product Name: MOBIL PEGASUS 805

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The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

## PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

**Respiratory Protection:** If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

**Hand Protection:** Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

**Eye Protection:** If contact is likely, safety glasses with side shields are recommended.

**Skin and Body Protection:** Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

**Specific Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

## ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

## SECTION 9

## PHYSICAL AND CHEMICAL PROPERTIES

**Note:** Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

## GENERAL INFORMATION



Product Name: MOBIL PEGASUS 805  
Revision Date: 26 Nov 2019  
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Physical State: Liquid  
Color: Amber  
Odor: Characteristic  
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15.6 °C): 0.89  
Flammability (Solid, Gas): N/A  
Flash Point [Method]: >245°C (473°F) [ASTM D-92]  
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0  
Autoignition Temperature: N/D  
Boiling Point / Range: > 288°C (550°F)  
Decomposition Temperature: N/D  
Vapor Density (Air = 1): > 2 at 101 kPa  
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C  
Evaporation Rate (n-butyl acetate = 1): N/D  
pH: N/A  
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5  
Solubility in Water: Negligible  
Viscosity: 130 cSt (130 mm2/sec) at 40 °C | 13.5 cSt (13.5 mm2/sec) at 100°C [ASTM D 445]  
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D  
Melting Point: N/A  
Pour Point: -12°C (10°F)  
DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.



Product Name: MOBIL PEGASUS 805

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<b>Ingestion</b>	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
<b>Skin</b>	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
<b>Eye</b>	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
<b>Sensitization</b>	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
<b>Aspiration:</b> Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
<b>Germ Cell Mutagenicity:</b> No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
<b>Carcinogenicity:</b> No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
<b>Reproductive Toxicity:</b> No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
<b>Lactation:</b> No end point data for material.	Not expected to cause harm to breast-fed children.
<b>Specific Target Organ Toxicity (STOT)</b>	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

## TOXICITY FOR SUBSTANCES

NAME	ACUTE TOXICITY
2-PENTANOL, 4-METHYL-, HYDROGEN PHOSPHORODITHIOATE, ZINC SALT	Oral Lethality: LD50 2230 mg/kg (Rat)

## OTHER INFORMATION

### For the product itself:

Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components, this formulation, or similar formulations.

### Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.

Sulfonates: This product contains sulfonates which have been reported to cause skin sensitization.

The following ingredients are cited on the lists below: None.



Product Name: MOBIL PEGASUS 805

Revision Date: 26 Nov 2019

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**--REGULATORY LISTS SEARCHED--**

1 = NTP CARC

3 = IARC 1

5 = IARC 2B

2 = NTP SUS

4 = IARC 2A

6 = OSHA CARC

**SECTION 12****ECOLOGICAL INFORMATION**

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

**ECOTOXICITY**

Material -- Not expected to be harmful to aquatic organisms.

**MOBILITY**

Base oil component -- Low solubility and floats and is expected to migrate from water to the land.  
Expected to partition to sediment and wastewater solids.

**PERSISTENCE AND DEGRADABILITY****Biodegradation:**

Base oil component -- Expected to be inherently biodegradable

**BIOACCUMULATION POTENTIAL**

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

**SECTION 13****DISPOSAL CONSIDERATIONS**

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

**DISPOSAL RECOMMENDATIONS**

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

**REGULATORY DISPOSAL INFORMATION**

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.



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**Empty Container Warning** Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

<b>SECTION 14</b>	<b>TRANSPORT INFORMATION</b>
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**LAND (DOT):** Not Regulated for Land Transport

**LAND (TDG):** Not Regulated for Land Transport

**SEA (IMDG):** Not Regulated for Sea Transport according to IMDG-Code

**Marine Pollutant:** No

**AIR (IATA):** Not Regulated for Air Transport

<b>SECTION 15</b>	<b>REGULATORY INFORMATION</b>
-------------------	-------------------------------

**OSHA HAZARD COMMUNICATION STANDARD:** This material is not considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

**Listed or exempt from listing/notification on the following chemical inventories:** AICS, DSL, ENCS, ISHL, KECI, PICCS, TCSI, TSCA

**Special Cases:**

Inventory	Status
IECSC	Restrictions Apply

**SARA 302:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

**SARA (311/312) REPORTABLE GHS HAZARD CLASSES:** None.

**SARA (313) TOXIC RELEASE INVENTORY:** This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

**The following ingredients are cited on the lists below:**



Product Name: MOBIL PEGASUS 805

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Chemical Name	CAS Number	List Citations
2-PENTANOL, 4-METHYL-, HYDROGEN PHOSPHORODITHIOATE, ZINC SALT	2215-35-2	15
SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE	64742-54-7	17, 18, 19

## --REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

## SECTION 16

## OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

**KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):**

H303: May be harmful if swallowed; Acute Tox Oral, Cat 5

H315: Causes skin irritation; Skin Corr/Irritation, Cat 2

H317: May cause allergic skin reaction; Skin Sensitization, Cat 1

H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1

H401: Toxic to aquatic life; Acute Env Tox, Cat 2

H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2

H413: May cause long lasting harmful effects to aquatic life; Chronic Env Tox, Cat 4

**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**

Composition: Component Table information was modified.

Section 09: Vapor Pressure information was added.

Section 11 Acute Toxicity data - Header information was added.

Section 11 Substance Name - Header information was added.

Section 11 Substance Toxicity table - Header information was added.

Section 11 Substance Toxicology table information was added.

Section 12: information was modified.

Section 15: List Citations Table information was modified.

Section 15: National Chemical Inventory Listing information was modified.

Section 16: HCode Key information was modified.

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Product Name: MOBIL PEGASUS 805

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Internal Use Only

MHC: 0B, 0B, 0, 0, 0, 0

PPEC: A

DGN: 2007675XUS (1015410)

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## APPENDIX C

### Lithologic Soil Sampling Logs

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 <b>ENSOLUM</b> Environmental, Engineering and Hydrogeologic Consultants								Sample Name: BH01		Date: 1/24/2024	
								Site Name: Big Eddy Unit 156 CS			
								Incident Number: NAPP2333240255			
								Job Number: 03C1558311			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								Logged By: MR		Method: Hand Auger	
Coordinates: 32.412354, -104.064453								Hole Diameter: 3.5"		Total Depth: 1'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
M	<168	5.2	N	BH01	0.5	0.5	CCHE	0-1' CALICHE, dark brown, some white/light brown gravel, poorly sorted, coarse to medium grained, sub-rounded grains, no stain, no odor, moist.			
M	<168	0.3	N	BH01A	1	1 TD		Total Depth @ 1 foot bgs, auger refusal.			



## APPENDIX D

### Photographic Log

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**Photographic Log**

XTO Energy

Big Eddy Unit 156 CS

Incident Number NAPP2333240255



Photograph: 1 Date: 11/17/2023  
Description: Site conditions following the release.  
View: Southwest



Photograph: 2 Date: 1/10/2024  
Description: Site assessment, liner condition.  
View: Southeast



Photograph: 3 Date: 1/10/2024  
Description: Site assessment, liner tear location.  
View: South



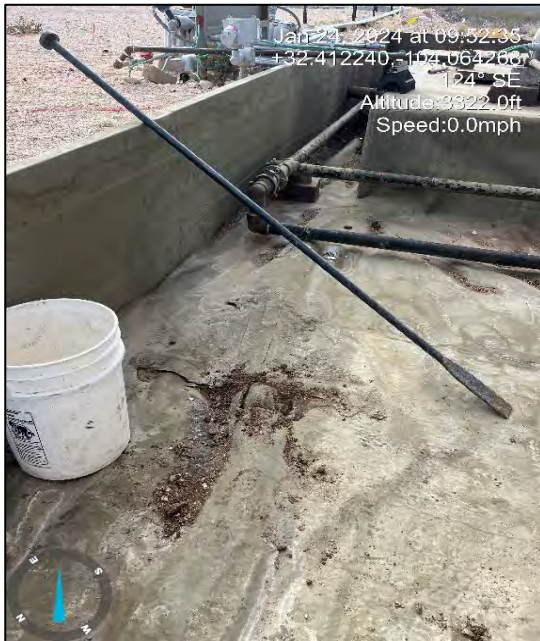
Photograph: 4 Date: 1/24/2024  
Description: Delineation activities, BH01.  
View: East

**Photographic Log**

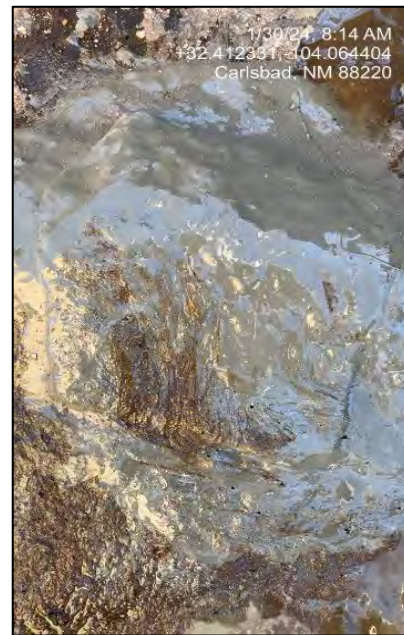
XTO Energy

Big Eddy Unit 156 CS

Incident Number NAPP2333240255



Photograph: 1                      Date: 1/24/2024  
Description: Delineation activities, BH01 backfilled.  
View: Southeast



Photograph: 2                      Date: 1/30/2024  
Description: BH01 liner patch.  
View: East



## APPENDIX E

### Laboratory Analytical Reports & Chain of Custody Documentation

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Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

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

Generated 1/18/2024 10:48:31 AM

## JOB DESCRIPTION

BIG EDDY UNIT 156 CS  
03C1558311

## JOB NUMBER

890-5946-1

Eurofins Carlsbad  
1089 N Canal St.  
Carlsbad NM 88220

See page two for job notes and contact information.

# Eurofins Carlsbad

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
1/18/2024 10:48:31 AM

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

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Laboratory Job ID: 890-5946-1  
SDG: 03C1558311

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Definitions/Glossary

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1  
SDG: 03C1558311

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

## Case Narrative

Client: Ensolum  
Project: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1

**Job ID: 890-5946-1**

**Eurofins Carlsbad**

### Job Narrative 890-5946-1

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

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

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

#### Receipt

The samples were received on 1/10/2024 2:53 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was -0.4°C

#### Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: SS 01 (890-5946-1), SS 02 (890-5946-2), SS 03 (890-5946-3) and SS 04 (890-5946-4).

#### GC VOA

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-71001 and analytical batch 880-71037 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

Method 8015MOD\_NM: The surrogate recovery for the blank associated with preparation batch 880-70792 and analytical batch 880-70811 was outside the upper control limits.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: (880-37809-A-21-D), (880-37809-A-21-E MS) and (880-37809-A-21-F 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 880-70792 and analytical batch 880-70811 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

#### HPLC/IC

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

Eurofins Carlsbad

Client Sample Results

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1  
SDG: 03C1558311

Client Sample ID: SS 01  
Date Collected: 01/10/24 13:20  
Date Received: 01/10/24 14:53  
Sample Depth: 0.5'

Lab Sample ID: 890-5946-1  
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00199	U	0.00199	mg/Kg	-	01/16/24 13:33	01/17/24 13:00	1	
Toluene	<0.00199	U	0.00199	mg/Kg	-	01/16/24 13:33	01/17/24 13:00	1	
Ethylbenzene	<0.00199	U	0.00199	mg/Kg	-	01/16/24 13:33	01/17/24 13:00	1	
m-Xylene & p-Xylene	<0.00398	U **	0.00398	mg/Kg	-	01/16/24 13:33	01/17/24 13:00	1	
o-Xylene	<0.00199	U	0.00199	mg/Kg	-	01/16/24 13:33	01/17/24 13:00	1	
Xylenes, Total	<0.00398	U **	0.00398	mg/Kg	-	01/16/24 13:33	01/17/24 13:00	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	85		70 - 130			01/16/24 13:33	01/17/24 13:00	1	
1,4-Difluorobenzene (Surr)	75		70 - 130			01/16/24 13:33	01/17/24 13:00	1	

Method: TAL SOP Total BTEX - Total BTEX Calculation									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total BTEX	<0.00398	U	0.00398	mg/Kg	-		01/17/24 13:00	1	

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total TPH	76.4		50.3	mg/Kg	-		01/14/24 17:07	1	

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	50.3	mg/Kg	-	01/12/24 17:11	01/14/24 17:07	1	
Diesel Range Organics (Over C10-C28)	76.4		50.3	mg/Kg	-	01/12/24 17:11	01/14/24 17:07	1	
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg	-	01/12/24 17:11	01/14/24 17:07	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	115		70 - 130			01/12/24 17:11	01/14/24 17:07	1	
o-Terphenyl	93		70 - 130			01/12/24 17:11	01/14/24 17:07	1	

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	11.4		5.00	mg/Kg	-		01/13/24 06:22	1	

Client Sample ID: SS 02  
Date Collected: 01/10/24 13:25  
Date Received: 01/10/24 14:53  
Sample Depth: 0.5'

Lab Sample ID: 890-5946-2  
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00198	U	0.00198	mg/Kg	-	01/16/24 13:33	01/17/24 13:20	1	
Toluene	<0.00198	U	0.00198	mg/Kg	-	01/16/24 13:33	01/17/24 13:20	1	
Ethylbenzene	<0.00198	U	0.00198	mg/Kg	-	01/16/24 13:33	01/17/24 13:20	1	
m-Xylene & p-Xylene	<0.00397	U **	0.00397	mg/Kg	-	01/16/24 13:33	01/17/24 13:20	1	
o-Xylene	<0.00198	U	0.00198	mg/Kg	-	01/16/24 13:33	01/17/24 13:20	1	
Xylenes, Total	<0.00397	U **	0.00397	mg/Kg	-	01/16/24 13:33	01/17/24 13:20	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	85		70 - 130			01/16/24 13:33	01/17/24 13:20	1	

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Client Sample Results

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1  
SDG: 03C1558311

Client Sample ID: SS 02  
Date Collected: 01/10/24 13:25  
Date Received: 01/10/24 14:53  
Sample Depth: 0.5'

Lab Sample ID: 890-5946-2  
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)									
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1,4-Difluorobenzene (Surr)	85		70 - 130			01/16/24 13:33	01/17/24 13:20	1	
Method: TAL SOP Total BTEX - Total BTEX Calculation									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total BTEX	<0.00397	U	0.00397	mg/Kg			01/17/24 13:20	1	
Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total TPH	<49.8	U	49.8	mg/Kg			01/14/24 17:29	1	
Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		01/12/24 17:11	01/14/24 17:29	1	
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		01/12/24 17:11	01/14/24 17:29	1	
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		01/12/24 17:11	01/14/24 17:29	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	106		70 - 130			01/12/24 17:11	01/14/24 17:29	1	
o-Terphenyl	85		70 - 130			01/12/24 17:11	01/14/24 17:29	1	
Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	25.9		5.00	mg/Kg			01/13/24 06:27	1	

Client Sample ID: SS 03  
Date Collected: 01/10/24 13:30  
Date Received: 01/10/24 14:53  
Sample Depth: 0.5'

Lab Sample ID: 890-5946-3  
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00200	U	0.00200	mg/Kg		01/16/24 13:33	01/17/24 13:41	1	
Toluene	<0.00200	U	0.00200	mg/Kg		01/16/24 13:33	01/17/24 13:41	1	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/16/24 13:33	01/17/24 13:41	1	
m-Xylene & p-Xylene	<0.00399	U **	0.00399	mg/Kg		01/16/24 13:33	01/17/24 13:41	1	
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/16/24 13:33	01/17/24 13:41	1	
Xylenes, Total	<0.00399	U **	0.00399	mg/Kg		01/16/24 13:33	01/17/24 13:41	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	87		70 - 130			01/16/24 13:33	01/17/24 13:41	1	
1,4-Difluorobenzene (Surr)	82		70 - 130			01/16/24 13:33	01/17/24 13:41	1	
Method: TAL SOP Total BTEX - Total BTEX Calculation									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total BTEX	<0.00399	U	0.00399	mg/Kg			01/17/24 13:41	1	
Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total TPH	<50.0	U	50.0	mg/Kg			01/14/24 17:51	1	

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Client Sample Results

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1  
SDG: 03C1558311

Client Sample ID: SS 03  
Date Collected: 01/10/24 13:30  
Date Received: 01/10/24 14:53  
Sample Depth: 0.5'

Lab Sample ID: 890-5946-3  
Matrix: Solid

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		01/12/24 17:11	01/14/24 17:51	1	
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/12/24 17:11	01/14/24 17:51	1	
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/12/24 17:11	01/14/24 17:51	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	100		70 - 130			01/12/24 17:11	01/14/24 17:51	1	
o-Terphenyl	81		70 - 130			01/12/24 17:11	01/14/24 17:51	1	

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	<4.98	U	4.98	mg/Kg			01/13/24 06:38	1	

Client Sample ID: SS 04  
Date Collected: 01/10/24 13:35  
Date Received: 01/10/24 14:53  
Sample Depth: 0.5'

Lab Sample ID: 890-5946-4  
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00200	U	0.00200	mg/Kg		01/16/24 13:33	01/17/24 14:01	1	
Toluene	<0.00200	U	0.00200	mg/Kg		01/16/24 13:33	01/17/24 14:01	1	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/16/24 13:33	01/17/24 14:01	1	
m-Xylene & p-Xylene	<0.00400	U **	0.00400	mg/Kg		01/16/24 13:33	01/17/24 14:01	1	
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/16/24 13:33	01/17/24 14:01	1	
Xylenes, Total	<0.00400	U **	0.00400	mg/Kg		01/16/24 13:33	01/17/24 14:01	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	85		70 - 130			01/16/24 13:33	01/17/24 14:01	1	
1,4-Difluorobenzene (Surr)	77		70 - 130			01/16/24 13:33	01/17/24 14:01	1	

Method: TAL SOP Total BTEX - Total BTEX Calculation									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total BTEX	<0.00400	U	0.00400	mg/Kg			01/17/24 14:01	1	

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total TPH	<50.4	U	50.4	mg/Kg			01/14/24 18:12	1	

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)-C6-C10	<50.4	U	50.4	mg/Kg		01/12/24 17:11	01/14/24 18:12	1	
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4	mg/Kg		01/12/24 17:11	01/14/24 18:12	1	
Oil Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		01/12/24 17:11	01/14/24 18:12	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	112		70 - 130			01/12/24 17:11	01/14/24 18:12	1	
o-Terphenyl	90		70 - 130			01/12/24 17:11	01/14/24 18:12	1	

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Client Sample Results

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1  
SDG: 03C1558311

Client Sample ID: SS 04  
Date Collected: 01/10/24 13:35  
Date Received: 01/10/24 14:53  
Sample Depth: 0.5'

Lab Sample ID: 890-5946-4  
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	8.23		5.05	mg/Kg			01/13/24 06:33	1	

Surrogate Summary

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1  
SDG: 03C1558311

Method: 8021B - Volatile Organic Compounds (GC)  
Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	BFB1	DFBZ1				
		(70-130)	(70-130)				
890-5945-A-1-C MS	Matrix Spike	118	117				
890-5945-A-1-D MSD	Matrix Spike Duplicate	113	105				
890-5946-1	SS 01	85	75				
890-5946-2	SS 02	85	85				
890-5946-3	SS 03	87	82				
890-5946-4	SS 04	85	77				
LCS 880-71001/1-A	Lab Control Sample	110	113				
LCSD 880-71001/2-A	Lab Control Sample Dup	115	94				
MB 880-71001/5-A	Method Blank	71	89				
Surrogate Legend							
BFB = 4-Bromofluorobenzene (Surr)							
DFBZ = 1,4-Difluorobenzene (Surr)							

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

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	1CO1	OTPH1				
		(70-130)	(70-130)				
880-37809-A-21-E MS	Matrix Spike	158 S1+	117				
880-37809-A-21-F MSD	Matrix Spike Duplicate	158 S1+	118				
890-5946-1	SS 01	115	93				
890-5946-2	SS 02	106	85				
890-5946-3	SS 03	100	81				
890-5946-4	SS 04	112	90				
LCS 880-70792/2-A	Lab Control Sample	88	90				
LCSD 880-70792/3-A	Lab Control Sample Dup	99	104				
MB 880-70792/1-A	Method Blank	170 S1+	172 S1+				
Surrogate Legend							
1CO = 1-Chlorooctane							
OTPH = o-Terphenyl							

QC Sample Results

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1  
SDG: 03C1558311

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-71001/5-A					Client Sample ID: Method Blank				
Matrix: Solid					Prep Type: Total/NA				
Analysis Batch: 71037					Prep Batch: 71001				
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00200	U	0.00200	mg/Kg		01/16/24 13:33	01/17/24 11:16	1	
Toluene	<0.00200	U	0.00200	mg/Kg		01/16/24 13:33	01/17/24 11:16	1	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/16/24 13:33	01/17/24 11:16	1	
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		01/16/24 13:33	01/17/24 11:16	1	
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/16/24 13:33	01/17/24 11:16	1	
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		01/16/24 13:33	01/17/24 11:16	1	
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	71		70 - 130			01/16/24 13:33	01/17/24 11:16	1	
1,4-Difluorobenzene (Surr)	89		70 - 130			01/16/24 13:33	01/17/24 11:16	1	

Lab Sample ID: LCS 880-71001/1-A						Client Sample ID: Lab Control Sample			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 71037						Prep Batch: 71001			
Analyte		Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Benzene		0.100	0.1294		mg/Kg		129	70 - 130	
Toluene		0.100	0.1127		mg/Kg		113	70 - 130	
Ethylbenzene		0.100	0.1239		mg/Kg		124	70 - 130	
m-Xylene & p-Xylene		0.200	0.2698	*+	mg/Kg		135	70 - 130	
o-Xylene		0.100	0.1268		mg/Kg		127	70 - 130	
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	110		70 - 130						
1,4-Difluorobenzene (Surr)	113		70 - 130						

Lab Sample ID: LCSD 880-71001/2-A						Client Sample ID: Lab Control Sample Dup				
Matrix: Solid						Prep Type: Total/NA				
Analysis Batch: 71037						Prep Batch: 71001				
Analyte		Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene		0.100	0.1281		mg/Kg		128	70 - 130	1	35
Toluene		0.100	0.1178		mg/Kg		118	70 - 130	4	35
Ethylbenzene		0.100	0.1260		mg/Kg		126	70 - 130	2	35
m-Xylene & p-Xylene		0.200	0.2731	*+	mg/Kg		137	70 - 130	1	35
o-Xylene		0.100	0.1285		mg/Kg		129	70 - 130	1	35
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits							
4-Bromofluorobenzene (Surr)	115		70 - 130							
1,4-Difluorobenzene (Surr)	94		70 - 130							

Lab Sample ID: 890-5945-A-1-C MS						Client Sample ID: Matrix Spike			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 71037						Prep Batch: 71001			
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00198		0.100	0.1220		mg/Kg		114	70 - 130
Toluene	<0.00198		0.100	0.1055		mg/Kg		73	70 - 130

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QC Sample Results

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1  
SDG: 03C1558311

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

Lab Sample ID: 890-5945-A-1-C MS  
Matrix: Solid  
Analysis Batch: 71037

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 71001

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00198		0.100	0.1207		mg/Kg		104	70 - 130
m-Xylene & p-Xylene	<0.00396		0.201	0.2560		mg/Kg		99	70 - 130
o-Xylene	<0.00198		0.100	0.1198		mg/Kg		89	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	118		70 - 130						
1,4-Difluorobenzene (Surr)	117		70 - 130						

Lab Sample ID: 890-5945-A-1-D MSD  
Matrix: Solid  
Analysis Batch: 71037

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 71001

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00198	U	0.101	0.1143		mg/Kg		113	70 - 130	7	35
Toluene	<0.00198	U	0.101	0.1019		mg/Kg		101	70 - 130	3	35
Ethylbenzene	<0.00198	U	0.101	0.1098		mg/Kg		109	70 - 130	9	35
m-Xylene & p-Xylene	<0.00396	U *	0.202	0.2321		mg/Kg		115	70 - 130	10	35
o-Xylene	<0.00198	U	0.101	0.1097		mg/Kg		109	70 - 130	9	35
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	113		70 - 130								
1,4-Difluorobenzene (Surr)	105		70 - 130								

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

Lab Sample ID: MB 880-70792/1-A  
Matrix: Solid  
Analysis Batch: 70811

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 70792

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		01/12/24 17:11	01/14/24 09:00	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/12/24 17:11	01/14/24 09:00	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/12/24 17:11	01/14/24 09:00	1
Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac		
1-Chlorooctane	170	S1+	70 - 130	01/12/24 17:11	01/14/24 09:00	1		
o-Terphenyl	172	S1+	70 - 130	01/12/24 17:11	01/14/24 09:00	1		

Lab Sample ID: LCS 880-70792/2-A  
Matrix: Solid  
Analysis Batch: 70811

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 70792

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1087		mg/Kg		109	70 - 130
Diesel Range Organics (Over C10-C28)	1000	929.5		mg/Kg		93	70 - 130

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## QC Sample Results

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1  
SDG: 03C1558311

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

Lab Sample ID: LCS 880-70792/2-A

Matrix: Solid

Analysis Batch: 70811

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 70792

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	88		70 - 130
o-Terphenyl	90		70 - 130

Lab Sample ID: LCSD 880-70792/3-A

Matrix: Solid

Analysis Batch: 70811

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 70792

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1046		mg/Kg		105	70 - 130	4	20
Diesel Range Organics (Over C10-C28)			1000	904.7		mg/Kg		90	70 - 130	3	20
Surrogate		LCSD	LCSD								
	%Recovery	Qualifier	Limits								
1-Chlorooctane	99		70 - 130								
o-Terphenyl	104		70 - 130								

Lab Sample ID: 880-37809-A-21-E MS

Matrix: Solid

Analysis Batch: 70811

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 70792

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F1	1010	1410	F1	mg/Kg		136	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U F1	1010	1452	F1	mg/Kg		139	70 - 130		
Surrogate		MS	MS								
	%Recovery	Qualifier	Limits								
1-Chlorooctane	158	S1+	70 - 130								
o-Terphenyl	117		70 - 130								

Lab Sample ID: 880-37809-A-21-F MSD

Matrix: Solid

Analysis Batch: 70811

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 70792

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F1	1010	1373	F1	mg/Kg		132	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	1010	1493	F1	mg/Kg		143	70 - 130	3	20
Surrogate		MSD	MSD								
	%Recovery	Qualifier	Limits								
1-Chlorooctane	158	S1+	70 - 130								
o-Terphenyl	118		70 - 130								

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QC Sample Results

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1  
SDG: 03C1558311

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-70717/1-A Matrix: Solid Analysis Batch: 70796										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			01/13/24 04:04	1			

Lab Sample ID: LCS 880-70717/2-A Matrix: Solid Analysis Batch: 70796										Client Sample ID: Lab Control Sample Prep Type: Soluble	
Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	251.9		mg/Kg		101	90 - 110		

Lab Sample ID: LCSD 880-70717/3-A Matrix: Solid Analysis Batch: 70796										Client Sample ID: Lab Control Sample Dup Prep Type: Soluble	
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	255.1		mg/Kg		102	90 - 110	1	20

Lab Sample ID: 890-5944-A-2-B MS Matrix: Solid Analysis Batch: 70796										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	35.5		250	296.2		mg/Kg		104	90 - 110		

Lab Sample ID: 890-5944-A-2-C MSD Matrix: Solid Analysis Batch: 70796										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	35.5		250	296.9		mg/Kg		105	90 - 110	0	20

QC Association Summary

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1  
SDG: 03C1558311

GC VOA

Prep Batch: 71001

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5946-1	SS 01	Total/NA	Solid	5035	
890-5946-2	SS 02	Total/NA	Solid	5035	
890-5946-3	SS 03	Total/NA	Solid	5035	
890-5946-4	SS 04	Total/NA	Solid	5035	
MB 880-71001/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-71001/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-71001/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5945-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
890-5945-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 71037

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5946-1	SS 01	Total/NA	Solid	8021B	71001
890-5946-2	SS 02	Total/NA	Solid	8021B	71001
890-5946-3	SS 03	Total/NA	Solid	8021B	71001
890-5946-4	SS 04	Total/NA	Solid	8021B	71001
MB 880-71001/5-A	Method Blank	Total/NA	Solid	8021B	71001
LCS 880-71001/1-A	Lab Control Sample	Total/NA	Solid	8021B	71001
LCSD 880-71001/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	71001
890-5945-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	71001
890-5945-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	71001

Analysis Batch: 71101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5946-1	SS 01	Total/NA	Solid	Total BTEX	
890-5946-2	SS 02	Total/NA	Solid	Total BTEX	
890-5946-3	SS 03	Total/NA	Solid	Total BTEX	
890-5946-4	SS 04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 70792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5946-1	SS 01	Total/NA	Solid	8015NM Prep	
890-5946-2	SS 02	Total/NA	Solid	8015NM Prep	
890-5946-3	SS 03	Total/NA	Solid	8015NM Prep	
890-5946-4	SS 04	Total/NA	Solid	8015NM Prep	
MB 880-70792/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-70792/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-70792/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-37809-A-21-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-37809-A-21-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 70811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5946-1	SS 01	Total/NA	Solid	8015B NM	70792
890-5946-2	SS 02	Total/NA	Solid	8015B NM	70792
890-5946-3	SS 03	Total/NA	Solid	8015B NM	70792
890-5946-4	SS 04	Total/NA	Solid	8015B NM	70792
MB 880-70792/1-A	Method Blank	Total/NA	Solid	8015B NM	70792
LCS 880-70792/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	70792

Eurofins Carlsbad

QC Association Summary

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1  
SDG: 03C1558311

GC Semi VOA (Continued)

Analysis Batch: 70811 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-70792/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	70792
880-37809-A-21-E MS	Matrix Spike	Total/NA	Solid	8015B NM	70792
880-37809-A-21-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	70792

Analysis Batch: 70917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5946-1	SS 01	Total/NA	Solid	8015 NM	
890-5946-2	SS 02	Total/NA	Solid	8015 NM	
890-5946-3	SS 03	Total/NA	Solid	8015 NM	
890-5946-4	SS 04	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 70717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5946-1	SS 01	Soluble	Solid	DI Leach	
890-5946-2	SS 02	Soluble	Solid	DI Leach	
890-5946-3	SS 03	Soluble	Solid	DI Leach	
890-5946-4	SS 04	Soluble	Solid	DI Leach	
MB 880-70717/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-70717/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-70717/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-5944-A-2-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-5944-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 70796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5946-1	SS 01	Soluble	Solid	300.0	70717
890-5946-2	SS 02	Soluble	Solid	300.0	70717
890-5946-3	SS 03	Soluble	Solid	300.0	70717
890-5946-4	SS 04	Soluble	Solid	300.0	70717
MB 880-70717/1-A	Method Blank	Soluble	Solid	300.0	70717
LCS 880-70717/2-A	Lab Control Sample	Soluble	Solid	300.0	70717
LCSD 880-70717/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	70717
890-5944-A-2-B MS	Matrix Spike	Soluble	Solid	300.0	70717
890-5944-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	70717

Lab Chronicle

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1  
SDG: 03C1558311

Client Sample ID: SS 01  
Date Collected: 01/10/24 13:20  
Date Received: 01/10/24 14:53

Lab Sample ID: 890-5946-1  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	71001	01/16/24 13:33	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	71037	01/17/24 13:00	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			71101	01/17/24 13:00	SM	EET MID
Total/NA	Analysis	8015 NM		1			70917	01/14/24 17:07	SM	EET MID
Total/NA	Prep	8015NM Prep			9.95 g	10 mL	70792	01/12/24 17:11	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	70811	01/14/24 17:07	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	70717	01/12/24 08:10	CH	EET MID
Soluble	Analysis	300.0		1			70796	01/13/24 06:22	CH	EET MID

Client Sample ID: SS 02  
Date Collected: 01/10/24 13:25  
Date Received: 01/10/24 14:53

Lab Sample ID: 890-5946-2  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	71001	01/16/24 13:33	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	71037	01/17/24 13:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			71101	01/17/24 13:20	SM	EET MID
Total/NA	Analysis	8015 NM		1			70917	01/14/24 17:29	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	70792	01/12/24 17:11	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	70811	01/14/24 17:29	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	70717	01/12/24 08:10	CH	EET MID
Soluble	Analysis	300.0		1			70796	01/13/24 06:27	CH	EET MID

Client Sample ID: SS 03  
Date Collected: 01/10/24 13:30  
Date Received: 01/10/24 14:53

Lab Sample ID: 890-5946-3  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	71001	01/16/24 13:33	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	71037	01/17/24 13:41	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			71101	01/17/24 13:41	SM	EET MID
Total/NA	Analysis	8015 NM		1			70917	01/14/24 17:51	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	70792	01/12/24 17:11	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	70811	01/14/24 17:51	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	70717	01/12/24 08:10	CH	EET MID
Soluble	Analysis	300.0		1			70796	01/13/24 06:38	CH	EET MID

Client Sample ID: SS 04  
Date Collected: 01/10/24 13:35  
Date Received: 01/10/24 14:53

Lab Sample ID: 890-5946-4  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	71001	01/16/24 13:33	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	71037	01/17/24 14:01	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			71101	01/17/24 14:01	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1  
SDG: 03C1558311

Client Sample ID: SS 04  
Date Collected: 01/10/24 13:35  
Date Received: 01/10/24 14:53

Lab Sample ID: 890-5946-4  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			70917	01/14/24 18:12	SM	EET MID
Total/NA	Prep	8015NM Prep			9.93 g	10 mL	70792	01/12/24 17:11	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	70811	01/14/24 18:12	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	70717	01/12/24 08:10	CH	EET MID
Soluble	Analysis	300.0		1			70796	01/13/24 06:33	CH	EET MID

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

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Accreditation/Certification Summary

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1  
SDG: 03C1558311

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1  
SDG: 03C1558311

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

**Protocol References:**

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

Sample Summary

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-5946-1  
SDG: 03C1558311

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5946-1	SS 01	Solid	01/10/24 13:20	01/10/24 14:53	0.5'
890-5946-2	SS 02	Solid	01/10/24 13:25	01/10/24 14:53	0.5'
890-5946-3	SS 03	Solid	01/10/24 13:30	01/10/24 14:53	0.5'
890-5946-4	SS 04	Solid	01/10/24 13:35	01/10/24 14:53	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

Environment Testing  
Xenco



Work Order No: \_\_\_\_\_

www.xenco.com Page 1 of 1

Project Manager:	Ben Belili	Bill to: (if different)	Carlett Green
Company Name:	Ensolw, LLC	Company Name:	XTO Energy
Address:	3122 Noti Parks Hwy	Address:	3104 E Greene St
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	989-854-0852	Email:	bbelili@ensolw.com

Program:	UST/PST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/>
State of Project:	
Reporting:	Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/>
Deliverables:	EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other:

ANALYSIS REQUEST				Preservative Codes	
Project Name:	BIG EDDY UNIT 156 CS	Turn Around	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	None: NO	DI Water: H <sub>2</sub> O
Project Number:	03C155B311	Wet Ice:		Cool: Cool	MeOH: Me
Project Location:	32-41236-104-064507	Thermometer ID:	Turnover	HCL: HC	HNO <sub>3</sub> : HN
Sampler's Name:	Meredith Roberts	Correction Factor:	-0.2	H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub>	NaOH: Na
PO #:		Temperature Reading:	-0.6	H <sub>3</sub> PO <sub>4</sub> : HP	
SAMPLE RECEIPT				NaHSO <sub>4</sub> : NABIS	
Samples Received Intact:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Corrected Temperature:	-0.4	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>	
Cooler Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			Zn Acetate+NaOH: Zn	
Sample Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			NaOH+Ascorbic Acid: SACP	
Total Containers:					

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Sample Comments
SS01	S	1/19/24	1320	0.5'	G	1	Incident #:
SS02	I		1325		I	1	WAPP23324065
SS03	I		1330		I	1	
SS04	I		1335		I	1	Cost Center:
							PENDING
							mroberts@ensolw.com

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 <sub>2</sub> Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed	TCPL / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471		

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>Meredith Roberts</i>	<i>Ben Belili</i>	1/19/24 1403

Revised Date: 08/25/2020 Rev. 2020.2

## Eurofins Carlsbad

**Carlomagno Carlsbad**  
1089 N Canal St.  
Carlsbad, NM 88220  
Phone: 575-988-3199 Fax: 575-988-3199

## Chain of Custody Record



## Environment and "Fortress"

<b>Client Information (Sub Contract Lab)</b>				Sampler		Lab PM		Carrier Tracking No(s)		COC No:																			
Client Contact:				Phone:		Kramer, Jessica				890-2229 1																			
Shipping/Receiving				E-Mail		Jessica.Kramer@et.eurofinsus.com		State of Origin		Page: 1 of 1																			
Eurofins Environment Testing South Central				Accreditations Required (See note)		NELAP - Texas		New Mexico		Page: 1 of 1																			
Address: 1211 W Florida Ave,				Due Date Requested: 1/16/2024		<b>Analysis Requested</b>		Job #:		890-5946-1																			
City: Midland				TAT Requested (days):																									
State, Zip: TX, 79701																													
Phone: 432-704-5440(Tel)																													
Email:																													
Project Name: BIG EDDY UNIT 156 CS				Project #:				Preservation Codes:		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anchor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDTA Other:																			
Site: SSOV#:				Project #:				T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Y - Trizma Z - other (Specify)																					
<b>Sample Identification - Client ID (Lab ID)</b>				<b>Sample Date</b>		<b>Sample Time</b>		<b>Sample Type (C=Comp, G=grab)</b>		<b>Matrix (W=water Based, O=oil, B=Brown, A=Ally)</b>		<b>Field Filtered Sample (Yes or No)</b>		<b>Perform MS/MSD (Yes or No)</b>		<b>8015MOD_NM/8015NM_S_Prep (MOD) Full TPH</b>		<b>8015MOD_Calc</b>		<b>300_ORGFMM_28D/DI_LEACH Chloride</b>		<b>8021B/5035FP_Calc (MOD) BTEX</b>		<b>Total_BTEX_GCV</b>		<b>Total Number of containers</b>		<b>Special Instructions/Note:</b>	
SS 01 (890-5946-1)				1/10/24		13 20		Solid				X		X		X		X		X		X		1					
SS 02 (890-5946-2)				1/10/24		13 25		Solid				X		X		X		X		X		X		1					
SS 03 (890-5946-3)				1/10/24		13 30		Solid				X		X		X		X		X		X		1					
SS 04 (890-5946-4)				1/10/24		13 35		Solid				X		X		X		X		X		X		1					

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5946-1

SDG Number: 03C1558311

Login Number: 5946

List Source: Eurofins Carlsbad

List Number: 1

Creator: Bruns, Shannon

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5946-1

SDG Number: 03C1558311

Login Number: 5946  
List Number: 2  
Creator: Kramer, Jessica

List Source: Eurofins Midland  
List Creation: 01/12/24 12:32 PM

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



Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ben Belill  
Ensolum  
601 N. Marienfeld St.  
Suite 400  
Midland, Texas 79701  
Generated 2/7/2024 3:19:50 PM

## JOB DESCRIPTION

BIG EDDY UNIT 156 CS  
03C1558311

## JOB NUMBER

890-6024-1

Eurofins Carlsbad  
1089 N Canal St.  
Carlsbad NM 88220

See page two for job notes and contact information.

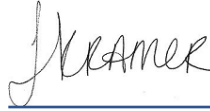
# Eurofins Carlsbad

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
2/7/2024 3:19:50 PM

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

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Laboratory Job ID: 890-6024-1  
SDG: 03C1558311

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Definitions/Glossary

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-6024-1  
SDG: 03C1558311

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

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

Glossary

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

## Case Narrative

Client: Ensolum  
Project: BIG EDDY UNIT 156 CS

Job ID: 890-6024-1

**Job ID: 890-6024-1**

**Eurofins Carlsbad**

### Job Narrative 890-6024-1

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

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

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

#### Receipt

The samples were received on 1/24/2024 11:10 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.2°C

#### Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: BH01 (890-6024-1) and BH01A (890-6024-2).

#### GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-72108 and analytical batch 880-72370 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (890-6040-A-1-G MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

#### GC Semi VOA

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-71752 and analytical batch 880-72446 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

#### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-71672 and analytical batch 880-71748 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

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Client Sample Results

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-6024-1  
SDG: 03C1558311

Client Sample ID: BH01  
Date Collected: 01/24/24 09:35  
Date Received: 01/24/24 11:10  
Sample Depth: 0.5'

Lab Sample ID: 890-6024-1  
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00201	U	0.00201	mg/Kg		02/01/24 10:24	02/06/24 01:38	1	
Toluene	<0.00201	U	0.00201	mg/Kg		02/01/24 10:24	02/06/24 01:38	1	
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		02/01/24 10:24	02/06/24 01:38	1	
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		02/01/24 10:24	02/06/24 01:38	1	
o-Xylene	<0.00201	U	0.00201	mg/Kg		02/01/24 10:24	02/06/24 01:38	1	
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		02/01/24 10:24	02/06/24 01:38	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	86		70 - 130			02/01/24 10:24	02/06/24 01:38	1	
1,4-Difluorobenzene (Surr)	116		70 - 130			02/01/24 10:24	02/06/24 01:38	1	
Method: TAL SOP Total BTEX - Total BTEX Calculation									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total BTEX	<0.00402	U	0.00402	mg/Kg			02/06/24 01:38	1	
Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total TPH	56.1		50.3	mg/Kg			02/07/24 03:04	1	
Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	50.3	mg/Kg		01/27/24 21:45	02/07/24 03:04	1	
Diesel Range Organics (Over C10-C28)	56.1		50.3	mg/Kg		01/27/24 21:45	02/07/24 03:04	1	
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		01/27/24 21:45	02/07/24 03:04	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	89		70 - 130			01/27/24 21:45	02/07/24 03:04	1	
o-Terphenyl	88		70 - 130			01/27/24 21:45	02/07/24 03:04	1	
Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	181	F1	4.99	mg/Kg			01/31/24 21:00	1	

Client Sample ID: BH01A  
Date Collected: 01/24/24 09:40  
Date Received: 01/24/24 11:10  
Sample Depth: 1'

Lab Sample ID: 890-6024-2  
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:24	02/06/24 02:05	1	
Toluene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:24	02/06/24 02:05	1	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:24	02/06/24 02:05	1	
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		02/01/24 10:24	02/06/24 02:05	1	
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:24	02/06/24 02:05	1	
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		02/01/24 10:24	02/06/24 02:05	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	119		70 - 130			02/01/24 10:24	02/06/24 02:05	1	

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Client Sample Results

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-6024-1  
SDG: 03C1558311

Client Sample ID: BH01A  
Date Collected: 01/24/24 09:40  
Date Received: 01/24/24 11:10  
Sample Depth: 1'

Lab Sample ID: 890-6024-2  
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)									
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1,4-Difluorobenzene (Surr)	106		70 - 130			02/01/24 10:24	02/06/24 02:05	1	
Method: TAL SOP Total BTEX - Total BTEX Calculation									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total BTEX	<0.00401	U	0.00401	mg/Kg			02/06/24 02:05	1	
Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total TPH	67.3		50.3	mg/Kg			02/07/24 03:25	1	
Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	50.3	mg/Kg		01/27/24 21:45	02/07/24 03:25	1	
Diesel Range Organics (Over C10-C28)	67.3		50.3	mg/Kg		01/27/24 21:45	02/07/24 03:25	1	
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		01/27/24 21:45	02/07/24 03:25	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	82		70 - 130			01/27/24 21:45	02/07/24 03:25	1	
o-Terphenyl	84		70 - 130			01/27/24 21:45	02/07/24 03:25	1	
Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	83.1		5.04	mg/Kg			01/31/24 21:15	1	

Surrogate Summary

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-6024-1  
SDG: 03C1558311

Method: 8021B - Volatile Organic Compounds (GC)  
Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-6024-1	BH01	86	116
890-6024-2	BH01A	119	106
890-6040-A-1-G MS	Matrix Spike	52 S1-	117
890-6040-A-1-H MSD	Matrix Spike Duplicate	128	100
LCS 880-72108/1-A	Lab Control Sample	99	85
LCSD 880-72108/2-A	Lab Control Sample Dup	117	87
MB 880-72108/5-A	Method Blank	77	89
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-6014-A-1-E MS	Matrix Spike	95	90
890-6014-A-1-F MSD	Matrix Spike Duplicate	82	75
890-6024-1	BH01	89	88
890-6024-2	BH01A	82	84
LCS 880-71752/2-A	Lab Control Sample	85	105
LCSD 880-71752/3-A	Lab Control Sample Dup	103	116
MB 880-71752/1-A	Method Blank	116	119
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-6024-1  
SDG: 03C1558311

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-72108/5-A					Client Sample ID: Method Blank				
Matrix: Solid					Prep Type: Total/NA				
Analysis Batch: 72370					Prep Batch: 72108				
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:24	02/05/24 16:00	1	
Toluene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:24	02/05/24 16:00	1	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:24	02/05/24 16:00	1	
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/01/24 10:24	02/05/24 16:00	1	
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:24	02/05/24 16:00	1	
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/01/24 10:24	02/05/24 16:00	1	
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	77		70 - 130			02/01/24 10:24	02/05/24 16:00	1	
1,4-Difluorobenzene (Surr)	89		70 - 130			02/01/24 10:24	02/05/24 16:00	1	

Lab Sample ID: LCS 880-72108/1-A					Client Sample ID: Lab Control Sample				
Matrix: Solid					Prep Type: Total/NA				
Analysis Batch: 72370					Prep Batch: 72108				
Analyte		Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Benzene		0.100	0.08845		mg/Kg		88	70 - 130	
Toluene		0.100	0.08737		mg/Kg		87	70 - 130	
Ethylbenzene		0.100	0.1017		mg/Kg		102	70 - 130	
m-Xylene & p-Xylene		0.200	0.2212		mg/Kg		111	70 - 130	
o-Xylene		0.100	0.1001		mg/Kg		100	70 - 130	
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	99		70 - 130						
1,4-Difluorobenzene (Surr)	85		70 - 130						

Lab Sample ID: LCSD 880-72108/2-A					Client Sample ID: Lab Control Sample Dup				
Matrix: Solid					Prep Type: Total/NA				
Analysis Batch: 72370					Prep Batch: 72108				
Analyte		Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD Limit
Benzene		0.100	0.08422		mg/Kg		84	70 - 130	5 35
Toluene		0.100	0.08745		mg/Kg		87	70 - 130	0 35
Ethylbenzene		0.100	0.09607		mg/Kg		96	70 - 130	6 35
m-Xylene & p-Xylene		0.200	0.2054		mg/Kg		103	70 - 130	7 35
o-Xylene		0.100	0.1185		mg/Kg		118	70 - 130	17 35
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	117		70 - 130						
1,4-Difluorobenzene (Surr)	87		70 - 130						

Lab Sample ID: 890-6040-A-1-G MS					Client Sample ID: Matrix Spike				
Matrix: Solid					Prep Type: Total/NA				
Analysis Batch: 72370					Prep Batch: 72108				
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U F1	0.0996	<0.00199	U F1	mg/Kg		0	70 - 130
Toluene	<0.00200	U F1	0.0996	<0.00199	U F1	mg/Kg		0	70 - 130

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QC Sample Results

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-6024-1  
SDG: 03C1558311

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

Lab Sample ID: 890-6040-A-1-G MS  
Matrix: Solid  
Analysis Batch: 72370

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 72108

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U F1	0.0996	<0.00199	U F1	mg/Kg		0	70 - 130
m-Xylene & p-Xylene	<0.00401	U F1	0.199	<0.00398	U F1	mg/Kg		0	70 - 130
o-Xylene	<0.00200	U F1	0.0996	<0.00199	U F1	mg/Kg		0	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	52	S1-	70 - 130						
1,4-Difluorobenzene (Surr)	117		70 - 130						

Lab Sample ID: 890-6040-A-1-H MSD  
Matrix: Solid  
Analysis Batch: 72370

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 72108

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	<0.00200	U F1	0.0990	0.08288		mg/Kg		84	70 - 130	NC	35
Toluene	<0.00200	U F1	0.0990	0.07669		mg/Kg		77	70 - 130	NC	35
Ethylbenzene	<0.00200	U F1	0.0990	0.07929		mg/Kg		80	70 - 130	NC	35
m-Xylene & p-Xylene	<0.00401	U F1	0.198	0.1539		mg/Kg		78	70 - 130	NC	35
o-Xylene	<0.00200	U F1	0.0990	0.09176		mg/Kg		93	70 - 130	NC	35
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	128		70 - 130								
1,4-Difluorobenzene (Surr)	100		70 - 130								

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

Lab Sample ID: MB 880-71752/1-A  
Matrix: Solid  
Analysis Batch: 72446

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 71752

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		01/27/24 21:45	02/06/24 18:36	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/27/24 21:45	02/06/24 18:36	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/27/24 21:45	02/06/24 18:36	1
Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac		
1-Chlorooctane	116		70 - 130	01/27/24 21:45	02/06/24 18:36	1		
o-Terphenyl	119		70 - 130	01/27/24 21:45	02/06/24 18:36	1		

Lab Sample ID: LCS 880-71752/2-A  
Matrix: Solid  
Analysis Batch: 72446

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 71752

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	917.7		mg/Kg		92	70 - 130
Diesel Range Organics (Over C10-C28)	1000	932.5		mg/Kg		93	70 - 130

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QC Sample Results

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-6024-1  
SDG: 03C1558311

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

Lab Sample ID: LCS 880-71752/2-A  
Matrix: Solid  
Analysis Batch: 72446

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 71752

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	85		70 - 130
o-Terphenyl	105		70 - 130

Lab Sample ID: LCSD 880-71752/3-A  
Matrix: Solid  
Analysis Batch: 72446

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 71752

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	961.9		mg/Kg		96	70 - 130	5	20
Diesel Range Organics (Over C10-C28)			1000	961.8		mg/Kg		96	70 - 130	3	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	103		70 - 130
o-Terphenyl	116		70 - 130

Lab Sample ID: 890-6014-A-1-E MS  
Matrix: Solid  
Analysis Batch: 72446

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 71752

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.3	U F1 F2	1010	840.0		mg/Kg		79	70 - 130		
Diesel Range Organics (Over C10-C28)	115	F1	1010	864.2		mg/Kg		74	70 - 130		

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	95		70 - 130
o-Terphenyl	90		70 - 130

Lab Sample ID: 890-6014-A-1-F MSD  
Matrix: Solid  
Analysis Batch: 72446

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 71752

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.3	U F1 F2	1010	681.4	F1 F2	mg/Kg		63	70 - 130	21	20
Diesel Range Organics (Over C10-C28)	115	F1	1010	726.4	F1	mg/Kg		61	70 - 130	17	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	82		70 - 130
o-Terphenyl	75		70 - 130

QC Sample Results

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-6024-1  
SDG: 03C1558311

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-71672/1-A Matrix: Solid Analysis Batch: 71748										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			01/31/24 20:45	1			

Lab Sample ID: LCS 880-71672/2-A Matrix: Solid Analysis Batch: 71748										Client Sample ID: Lab Control Sample Prep Type: Soluble	
Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	274.3		mg/Kg		110	90 - 110		

Lab Sample ID: LCSD 880-71672/3-A Matrix: Solid Analysis Batch: 71748										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	272.7		mg/Kg		109	90 - 110	1	20

Lab Sample ID: 890-6024-1 MS Matrix: Solid Analysis Batch: 71748										Client Sample ID: BH01 Prep Type: Soluble	
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	181	F1	250	481.8	F1	mg/Kg		120	90 - 110		

Lab Sample ID: 890-6024-1 MSD Matrix: Solid Analysis Batch: 71748										Client Sample ID: BH01 Prep Type: Soluble	
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	181	F1	250	483.9	F1	mg/Kg		121	90 - 110	0	20

QC Association Summary

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-6024-1  
SDG: 03C1558311

GC VOA

Prep Batch: 72108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6024-1	BH01	Total/NA	Solid	5035	
890-6024-2	BH01A	Total/NA	Solid	5035	
MB 880-72108/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-72108/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-72108/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-6040-A-1-G MS	Matrix Spike	Total/NA	Solid	5035	
890-6040-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 72370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6024-1	BH01	Total/NA	Solid	8021B	72108
890-6024-2	BH01A	Total/NA	Solid	8021B	72108
MB 880-72108/5-A	Method Blank	Total/NA	Solid	8021B	72108
LCS 880-72108/1-A	Lab Control Sample	Total/NA	Solid	8021B	72108
LCSD 880-72108/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	72108
890-6040-A-1-G MS	Matrix Spike	Total/NA	Solid	8021B	72108
890-6040-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	72108

Analysis Batch: 72528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6024-1	BH01	Total/NA	Solid	Total BTEX	
890-6024-2	BH01A	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 71752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6024-1	BH01	Total/NA	Solid	8015NM Prep	
890-6024-2	BH01A	Total/NA	Solid	8015NM Prep	
MB 880-71752/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-71752/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-71752/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-6014-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-6014-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 72446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6024-1	BH01	Total/NA	Solid	8015B NM	71752
890-6024-2	BH01A	Total/NA	Solid	8015B NM	71752
MB 880-71752/1-A	Method Blank	Total/NA	Solid	8015B NM	71752
LCS 880-71752/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	71752
LCSD 880-71752/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	71752
890-6014-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	71752
890-6014-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	71752

Analysis Batch: 72594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6024-1	BH01	Total/NA	Solid	8015 NM	
890-6024-2	BH01A	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-6024-1  
SDG: 03C1558311

HPLC/IC

Leach Batch: 71672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6024-1	BH01	Soluble	Solid	DI Leach	
890-6024-2	BH01A	Soluble	Solid	DI Leach	
MB 880-71672/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-71672/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-71672/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-6024-1 MS	BH01	Soluble	Solid	DI Leach	
890-6024-1 MSD	BH01	Soluble	Solid	DI Leach	

Analysis Batch: 71748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6024-1	BH01	Soluble	Solid	300.0	71672
890-6024-2	BH01A	Soluble	Solid	300.0	71672
MB 880-71672/1-A	Method Blank	Soluble	Solid	300.0	71672
LCS 880-71672/2-A	Lab Control Sample	Soluble	Solid	300.0	71672
LCSD 880-71672/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	71672
890-6024-1 MS	BH01	Soluble	Solid	300.0	71672
890-6024-1 MSD	BH01	Soluble	Solid	300.0	71672

Lab Chronicle

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-6024-1  
SDG: 03C1558311

Client Sample ID: BH01  
Date Collected: 01/24/24 09:35  
Date Received: 01/24/24 11:10

Lab Sample ID: 890-6024-1  
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	72108	02/01/24 10:24	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72370	02/06/24 01:38	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72528	02/06/24 01:38	SM	EET MID
Total/NA	Analysis	8015 NM		1			72594	02/07/24 03:04	SM	EET MID
Total/NA	Prep	8015NM Prep			9.95 g	10 mL	71752	01/27/24 21:45	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72446	02/07/24 03:04	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	71672	01/26/24 09:00	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	71748	01/31/24 21:00	CH	EET MID

Client Sample ID: BH01A  
Date Collected: 01/24/24 09:40  
Date Received: 01/24/24 11:10

Lab Sample ID: 890-6024-2  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	72108	02/01/24 10:24	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72370	02/06/24 02:05	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72528	02/06/24 02:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			72594	02/07/24 03:25	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	71752	01/27/24 21:45	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72446	02/07/24 03:25	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	71672	01/26/24 09:00	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	71748	01/31/24 21:15	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: BIG EDDY UNIT 156 CS

Job ID: 890-6024-1  
SDG: 03C1558311

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-6024-1  
SDG: 03C1558311

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

**Protocol References:**

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

Sample Summary

Client: Ensolum  
Project/Site: BIG EDDY UNIT 156 CS

Job ID: 890-6024-1  
SDG: 03C1558311

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-6024-1	BH01	Solid	01/24/24 09:35	01/24/24 11:10	0.5'
890-6024-2	BH01A	Solid	01/24/24 09:40	01/24/24 11:10	1'

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

## Chain of Custody

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

Environment Testing  
Xenco



Work Order No: \_\_\_\_\_

6024

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Work Order Comments	
Program: UST/PST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/>	
State of Project:	
Reporting: Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/>	
Deliverables: EDD <input type="checkbox"/> ADaPT <input type="checkbox"/> Other:	

Project Manager:	Ben Bellu	Bill to: (if different)	Garrett Green
Company Name:	Ensolum LLC	Company Name:	XTO Energy
Address:	3122 Nar'i Parks Hwy	Address:	3104 E Greene St
City, State ZIP:	Carlsbad, NM 88220	City/State ZIP:	Carlsbad, NM
Phone:	989.854.0852	Email:	bbellu@ensolum.com

Project Name:		Turn Around		ANALYSIS REQUEST		Preservative Codes	
Project Number:	316 EDDY UNIT 156 CS	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Rush			None: NO Cool: Cool HCL: HC H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> H <sub>3</sub> PO <sub>4</sub> : HP NaHSO <sub>4</sub> : NABIS Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub> Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: SARC	
Project Location:	32-A1236-104-064507	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:							
Cooler Custody Seals:	Yes No	Correction Factor:							
Sample Custody Seals:	Yes No	Temperature Reading:							
Total Containers:		Corrected Temperature:							

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Sample Comments
BH01	S	1/24/24	0935	0.5'	G	1	Incident #:
BH01A	↓	↓	0940	1'	↓	↓	NAPP2333240255
							Cost Center:
							1082491001
							mmhberts@ensolum.com

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 <sub>2</sub> Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed		TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471	

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliate 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)	Relinquished by: (Signature)	Received by: (Signature)
Meredith Roberts	Ben Bellu		
3	4	5	6

Revised Date: 08/25/2020 Rev. 2020.2



Environment Testing  
Xenco

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300  
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334  
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1236  
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Chain of Custody



890-6024 Chain of Custody

6024

Page 1 of 1

Project Manager:	Ben Beull	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy
Address:	3122 Nat'l Parks Hwy	Address:	3104 E Greene St
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM
Phone:	989.854.0852	Email:	bbeull@ensolum.com

Work Order Comments	
Program:	UST/PST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/>
State of Project:	*
Reporting:	Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/>
Deliverables:	EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other:

Project Name:	316 EDDY UNIT 156 CS	Turn Around	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	Pres. Code	
Project Number:	03C1558311	Due Date:			
Project Location:	32.41236, -104.064507	TAT starts the day received by the lab, if received by 4:30pm			
Sample's Name:	Mercedith Roberts				
PO #:					
<b>SAMPLE RECEIPT</b>					
Samples Received Intact:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Thermometer ID:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	T-20007	
Cooler Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Correction Factor:		0.4	
Sample Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Temperature Reading:		0.2	
Total Containers:		Corrected Temperature:		0.2	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Gdy/Comp	# of Cont	ANALYSIS REQUEST	Preservative Codes	Sample Comments
BH01	S	1/24/24	0935	0.5'	G	1	X		Incident #
BH01A	↓		0940	1'	↓	↓	X		NAVP2833240255
									Cost Center: 1082491001
									mrbact@ensolum.com

Total 2007 / 6010 2008 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO<sub>2</sub> Na Sr Ti Sn U V Zn  
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	1/24 11:18			

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-6024-1

SDG Number: 03C1558311

Login Number: 6024

List Source: Eurofins Carlsbad

List Number: 1

Creator: Bruns, Shannon

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-6024-1

SDG Number: 03C1558311

Login Number: 6024

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 01/25/24 02:46 PM

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



## APPENDIX F

### NMOCD Notifications

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## Green, Garrett J

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**From:** Green, Garrett J  
**Sent:** Wednesday, November 22, 2023 7:47 AM  
**To:** Enviro, OCD, EMNRD  
**Cc:** DelawareSpills /SM  
**Subject:** XTO 48 Hour Liner Inspection notification

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Good morning,

This is sent as a 48-hour notification, XTO is scheduled to inspect the lined containment at BEU 156 released on (11/17/2023), on Monday, November 27, 2023, at 11:00am MST. A 24 hour release notification was not sent since the release was less than 25 barrels in volume. Please call us with any questions or concerns.

GPS Coordinates: (32.412360,-104.064507)

Thank you,

**Garrett Green**  
Environmental Coordinator  
Delaware Business Unit  
(575) 200-0729  
[Garrett.Green@ExxonMobil.com](mailto:Garrett.Green@ExxonMobil.com)

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

## Collins, Melanie

---

**From:** OCDOnline@state.nm.us  
**Sent:** Tuesday, November 28, 2023 12:11 PM  
**To:** Collins, Melanie  
**Subject:** The Oil Conservation Division (OCD) has accepted the application, Application ID: 288895

**External Email - Think Before You Click**

To whom it may concern (c/o Melanie Collins for XTO ENERGY, INC),

The OCD has accepted the submitted *Notification of a release* (NOR), for incident ID (n#) nAPP2333240255, with the following conditions:

- **When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the initial C-141.**

Please reference nAPP2333240255, on all subsequent C-141 submissions and communications regarding the remediation of this release.

**NOTE:** As of December 2019, NMOCD has discontinued the use of the "RP" number.

If you have any questions regarding this application, or don't know why you have received this email, please contact us.

ocd.enviro@state.nm.us

**New Mexico Energy, Minerals and Natural Resources Department**  
1220 South St. Francis Drive  
Santa Fe, NM 87505

**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

QUESTIONS  
  
Action 314989

QUESTIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 314989
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2333240255
Incident Name	NAPP2333240255 BIG EDDY UNIT 156 COMPRESSOR STATION @ 0
Incident Type	Produced Water Release
Incident Status	Remediation Closure Report Received

Location of Release Source

Please answer all the questions in this group.

Site Name	BIG EDDY UNIT 156 COMPRESSOR STATION
Date Release Discovered	11/17/2023
Surface Owner	Federal

Incident Details

Please answer all the questions in this group.

Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release

Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.

Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Equipment Failure   Pump   Produced Water   Released: 5 BBL   Recovered: 5 BBL   Lost: 0 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Cause: Equipment Failure   Pump   Lube Oil   Released: 5 BBL   Recovered: 5 BBL   Lost: 0 BBL.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Pegasus 805 Ultra

**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**

QUESTIONS, Page 2

Action 314989

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:	5380
	Action Number:	314989
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS****Nature and Volume of Release (continued)**

Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	No
Reasons why this would be considered a submission for a notification of a major release	Unavailable.

*With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.*

**Initial Response**

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

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

*Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.*

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

I hereby agree and sign off to the above statement	Name: Garrett Green Title: SHE Coordinator Email: garrett.green@exxonmobil.com Date: 02/15/2024
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Phone:(505) 476-3470 Fax:(505) 476-3462

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**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
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**Santa Fe, NM 87505**

QUESTIONS, Page 3

Action 314989

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:	5380
	Action Number:	314989
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS****Site Characterization**

Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 51 and 75 (ft.)
What method was used to determine the depth to ground water	OCD Imaging Records Lookup
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between 500 and 1000 (ft.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 500 and 1000 (ft.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Between 1 and 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Medium
A 100-year floodplain	Between 1000 (ft.) and ½ (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

**Remediation Plan**

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	Yes
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
On what estimated date will the remediation commence	01/24/2024
On what date will (or did) the final sampling or liner inspection occur	01/24/2024
On what date will (or was) the remediation complete(d)	01/24/2024
What is the estimated surface area (in square feet) that will be remediated	0
What is the estimated volume (in cubic yards) that will be remediated	0
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.	
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS, Page 4  
  
Action 314989

**QUESTIONS (continued)**

Operator:  XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:  5380
	Action Number:  314989
	Action Type:  [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Remediation Plan (continued)</b>	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
<b>This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:</b>	
<i>(Select all answers below that apply.)</i>	
Is (or was) there affected material present needing to be removed	No
Is (or was) there a power wash of the lined containment area (to be) performed	Yes
OTHER (Non-listed remedial process)	Not answered.
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
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I hereby agree and sign off to the above statement	Name: Garrett Green Title: SHE Coordinator Email: garrett.green@exxonmobil.com Date: 02/15/2024
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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QUESTIONS, Page 6

Action 314989

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:	5380
	Action Number:	314989
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Liner Inspection Information</b>	
Last liner inspection notification (C-141L) recorded	{Unavailable.}
Was all the impacted materials removed from the liner	Unavailable.

**Remediation Closure Request**

Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.

Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	Yes
What was the total surface area (in square feet) remediated	0
What was the total volume (cubic yards) remediated	0
Summarize any additional remediation activities not included by answers (above)	N/A

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

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

I hereby agree and sign off to the above statement	Name: Garrett Green Title: SHE Coordinator Email: garrett.green@exxonmobil.com Date: 02/15/2024
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CONDITIONS  
  
Action 314989

CONDITIONS

Operator:  XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:  5380
	Action Number:  314989
	Action Type:  [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	Remediation Closure approved. All areas not reasonably needed for production or subsequent drilling operations will need to be reclaimed and revegetated as soon as practical. Areas reasonably needed for production or subsequent drilling operations will need to be reclaimed and revegetated as soon as they are no longer reasonably needed. A report for reclamation and revegetation will need to be submitted and approved prior to this incident receiving the final status of "Restoration Complete".	2/16/2024