

NAB1435036006

2RP-2661

XTO Energy, Inc.

Remediation

Plan/Closure

Poker Lake Unit-

CVX-JV-PB #008H

03/16/2020



April 2, 2019

Mr. Bradford Billings
New Mexico Oil Conservation Division
1220 South St. Francis Drive, #3
Santa Fe, New Mexico 87505

**RE: Closure Request
Poker Lake Unit-CVX-JV-PB #008H
Remediation Permit Number 2RP-2661
Eddy County, New Mexico**

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following report detailing the soil sampling activities at the Poker Lake Unit (PLU)-CVX-JV-PB #008H well pad (Site) in Unit H, Section 32, Township 25 South, Range 31 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling activities was to assess impacts to soil after a contract crew improperly dismantled the frac tank containment while cleaning the frac tank and caused the release of 90 bbls of produced water onto the well pad. The release was discovered on December 12, 2014, and affected approximately 19,000 square feet of the caliche well pad. A vacuum truck was used to recover the free standing fluid; approximately 10 bbls of produced water were recovered. The former operator reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on December 15, 2014, and was assigned Remediation Permit (RP) Number 2RP-2661 (Attachment 1). Although the release occurred while the facility was operated by the previous operator, XTO is the current operator and is committed to addressing any releases that remain unresolved.

The release is included in the Compliance Agreement for Remediation for Historical Releases (Compliance Agreement) between XTO and the NMOCD effective November 13, 2018. The purpose of the Compliance Agreement is to ensure that reportable releases that occurred prior to August 14, 2018, where XTO is responsible for the corrective action, comply with Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) as amended on August 14, 2018. The release is categorized as a Tier IV site in the Compliance Agreement, meaning remediation of the release began before prior to August 14, 2018, the effective date of 19.15.29 NMAC, however remediation was pending. Based on the results of the soil sampling events, XTO is submitting this closure report and requesting no further action for this release event.





BACKGROUND

According to Section 12 of 19.15.29 NMAC, LTE applied Table 1, *Closure Criteria for Soils Impacted by a Release*. Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well is the United States Geological Survey well 320643103465002, located approximately 1.8 miles northeast of the Site, with a depth to groundwater of 318 feet bgs and a total depth of 400 feet bgs. The water well is approximately 84 feet higher in elevation than the Site. The nearest continuously flowing water or significant watercourse to the Site is a dry wash located approximately 1.2 miles southwest 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. Based on these criteria, the following NMOCD Table 1 closure criteria apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 2,500 mg/kg total petroleum hydrocarbons (TPH); 1,000 mg/kg TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO); and 20,000 mg/kg chloride.

SOIL SAMPLING

On February 15, 2018, an LTE scientist collected five preliminary soil samples (SS01 through SS05) within the release area to assess the lateral extent of soil impacts. The soil sample locations, depicted on Figure 2, were selected based on information provided on the initial Form C-141s and field observations. To eliminate the effects from weathering and natural degradation of contaminants at the ground surface, the soil samples were collected from each sample location at approximately 0.5 feet bgs. The soil samples were screened for volatile aromatic hydrocarbons and chlorides using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples were shipped at 4 degrees Celsius (°C) under strict chain-of-custody procedures to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico, for analysis of BTEX by United States Environmental Protection Agency (USEPA) Method 8021B, TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) by USEPA Method 8015M/D, and chloride by USEPA Method 300.0.

On December 21, 2018, LTE personnel returned to the Site to assess the vertical extent of impacted soil in the release area. Potholes were advanced by backhoe to a depth of 4 feet bgs at three of the preliminary soil sample locations (SS01, SS02, and SS05). Soil samples SS01A, SS02A, and SS05A were collected from a depth of 4 feet bgs at the preliminary SS01, SS02, and SS05 soil sample locations. The soil samples were collected, handled, and analyzed as described above and submitted to Xenco Laboratories (Xenco) in Midland, Texas. The potholes were backfilled with the soil removed; no soil was removed from the site for disposal. The soil sample locations are depicted on Figure 2 and soil sample logs are included in Attachment 2.





ANALYTICAL RESULTS

Laboratory analytical results indicated that BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria in soil samples SS01 through SS05 collected at 0.5 feet bgs, and soil samples SS01A, SS02A, and SS05A collected at 4 feet bgs. Based on the laboratory analytical results, no soil excavation was required. Laboratory analytical results are presented on Figure 2 and summarized in Table 1, and the complete laboratory analytical reports are included as Attachment 3.

CONCLUSIONS

Soil samples SS01 through SS05, SS01A, SS02A, and SS05A were collected within the release area to determine if any impacted soil remained in place as a result of the historical release. Laboratory analytical results indicated that BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria in all soil samples. Initial response efforts and natural degradation have mitigated impacts at the Site. XTO requests no further action for this release. An updated NMOCD Form C-141 is included as Attachment 1. A photographic log of the Site is included as Attachment 4.

If you have any questions or comments, please do not hesitate to contact Ms. Adrian Baker at (432) 887-1255.

Sincerely,
LT ENVIRONMENTAL, INC.

Adrian Baker
Project Geologist

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Jim Amos, U.S. Bureau of Land Management
Crystal Weaver, U.S. Bureau of Land Management
Deborah McKinney, U.S. Bureau of Land Management
Michael Bratcher, NMOCD





Attachments:

- Figure 1 Site Location Map
- Figure 2 Soil Sample Locations
- Table 1 Soil Analytical Results
- Attachment 1 Initial/Final NMOCD Form C-141 (2RP-2661)
- Attachment 2 Soil Sample Logs
- Attachment 3 Laboratory Analytical Reports
- Attachment 4 Photographic Log



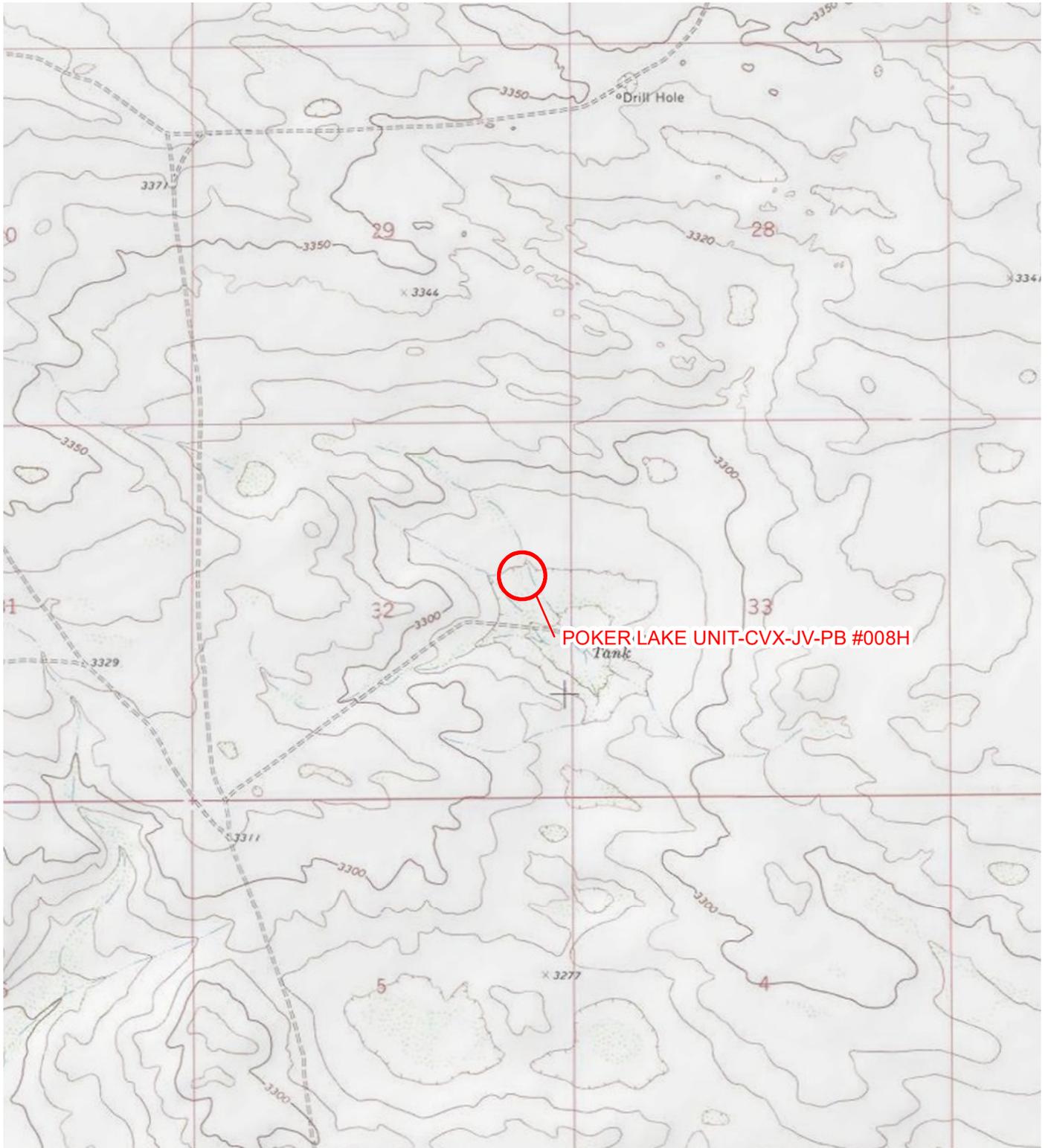
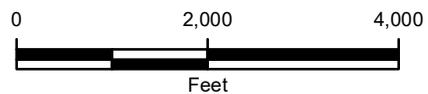


IMAGE COURTESY OF ESRI/USGS

LEGEND

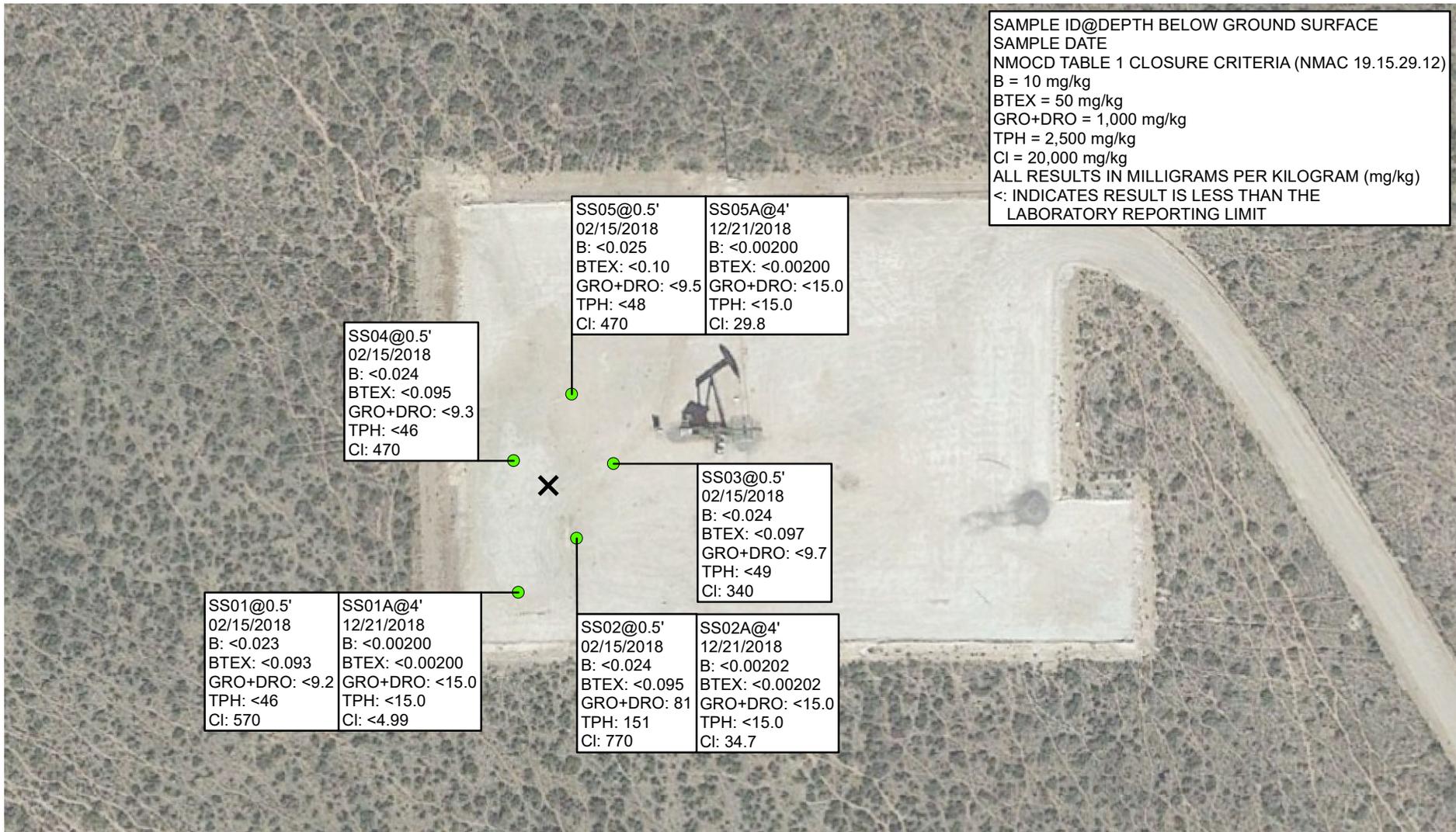
 SITE LOCATION



NOTE: REMEDIATION PERMIT
NUMBER 2RP-2661

FIGURE 1
SITE LOCATION MAP
POKER LAKE UNIT-CVX-JV-PB #008H
UNIT H SEC 32 T25S R31E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.





SAMPLE ID@DEPTH BELOW GROUND SURFACE
 SAMPLE DATE
 NMOCD TABLE 1 CLOSURE CRITERIA (NMAC 19.15.29.12)
 B = 10 mg/kg
 BTEX = 50 mg/kg
 GRO+DRO = 1,000 mg/kg
 TPH = 2,500 mg/kg
 Cl = 20,000 mg/kg
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT

LEGEND

- X** RELEASE LOCATION
- SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS

B: BENZENE
 BTEX – TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
 GRO – GASOLINE RANGE ORGANICS
 DRO – DIESEL RANGE ORGANICS
 TPH – TOTAL PETROLEUM HYDROCARBONS
 Cl - CHLORIDE
 NMAC – NEW MEXICO ADMINISTRATIVE CODE
 NMOCD – NEW MEXICO OIL CONSERVATION DIVISION
 NOTE: REMEDIATION PERMIT NUMBER 2RP-2661

IMAGE COURTESY OF GOOGLE EARTH 2017

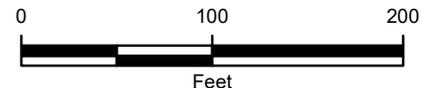


FIGURE 2
SOIL SAMPLE LOCATIONS
POKER LAKE UNIT-CVX-JV-PB #008H
UNIT H SEC 32 T25S R31E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



**TABLE 1
SOIL ANALYTICAL RESULTS**

**POKER LAKE UNIT-CVX-JV-PB #008H
REMEDICATION PERMIT NUMBER 2RP-2661
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 ORO (mg/kg)	GRO and DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS01	0.5	02/15/2018	<0.023	<0.047	<0.047	<0.093	<0.093	<4.7	<9.2	<46	<9.2	<46	570
SS02	0.5	02/15/2018	<0.024	<0.047	<0.047	<0.095	<0.095	<4.7	81	70	81	151	770
SS03	0.5	02/15/2018	<0.024	<0.048	<0.048	<0.097	<0.097	<4.8	<9.7	<49	<9.7	<49	340
SS04	0.5	02/15/2018	<0.024	<0.048	<0.048	<0.095	<0.095	<4.8	<9.3	<46	<9.3	<46	470
SS05	0.5	02/15/2018	<0.025	<0.050	<0.050	<0.10	<0.10	<5.0	<9.5	<48	<9.5	<48	470
SS01A	4	12/21/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99
SS02A	4	12/21/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	34.7
SS05A	4	12/21/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	29.8
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes
mg/kg - milligrams per kilogram

NE - not established

NMOCD - New Mexico Oil Conservation Division

DRO - diesel range organics

GRO - gasoline range organics

ORO - oil range organics

TPH - total petroleum hydrocarbons

< - indicates result is below laboratory reporting limits

Bold - indicates result exceeds the applicable regulatory standard

* - indicates sample was collected in area to be reclaimed after remediation is complete;
closure criteria for chloride concentration in the top 4 feet of soil is 600 mg/kg

Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018

NMAC - New Mexico Administrative Code



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

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-141

DEC 15 2014

Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

RECEIVED

Release Notification and Corrective Action

NAB1435036006 **OPERATOR** Initial Report Final Report

Name of Company: BOPCO, L.P. <i>2100737</i>	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: PLU-CVX-JV-PB #008H	Facility Type: Exploration and Production
Surface Owner: Federal	Mineral Owner: Federal
API No. 30-015-42630	

LOCATION OF RELEASE

Unit Letter	Section 32	Township 25S	Range 31E	Feet from the 2180	North/South Line North	Feet from the 660	East/West Line East	County Eddy
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Latitude N 32.087867 Longitude W 103.793453

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 90 bbls. Produced water	Volume Recovered: approximately 10 bbbls.
Source of Release: Frac tank containment	Date and Hour of Occurrence: <i>12/10/14</i> 12/11/14 time unknown	Date and Hour of Discovery: 12/11/14 at 11:30 a.m. 12/12/14
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? E-mail to the NMOCD and BLM <i>12/12/14</i> <i>T. Savoie</i>	
By Whom? Tony Savoie	Date and Hour: 12/11/14 at 1:31 p.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The produced water was spilled by contract crew improperly dismantling and cleaning the frac tank containment around the frac tank farm. All of the free standing fluid was recovered with a vacuum truck.

Describe Area Affected and Cleanup Action Taken.*

The spill impacted approximately 19,000 sq.ft. of caliche well pad. The spill are will be cleaned up once the frac tanks and equipment have been removed from the area. The spill will be cleaned up in accordance to the NMOCD and BLM remediation guidelines.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: <i>Tony Savoie</i>	OIL CONSERVATION DIVISION	
Printed Name: Tony Savoie	Signed By <i>M. L. B...</i> Approved by Environmental Specialist:	
Title: Waste Management and Remediation Specialist	Approval Date: <i>12/10/14</i>	Expiration Date:
E-mail Address: <i>tasavoie@basspet.com</i>	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 12/15/14	Remediation per O.C.D. Rules & Guidelines	
Phone: 432-556-8730	SUBMIT REMEDIATION PROPOSAL NO	

* Attach Additional Sheets If Necessary

LATER THAN: 1/10/15

2RP-2601

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

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

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

Incident ID	
District RP	2RP-2661
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #: 30-015-42630 / 2RP-2661
Contact mailing address 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude 32.087867 Longitude -103.793453
(NAD 83 in decimal degrees to 5 decimal places)

Site Name PLU-CVX-JV-PB #008H	Site Type Exploration and Production
Date Release Discovered 12/12/2014	API# (if applicable) 30-015-42630

Unit Letter	Section	Township	Range	County
H	32	25S	31E	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) 90 bbls	Volume Recovered (bbls) 10 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input 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 type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

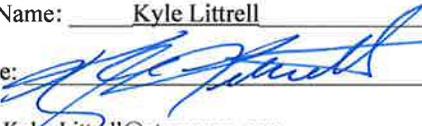
The produced water was spilled by contract crew improperly dismantling and cleaning the frac tank containment around the frac tank farm. All free-standing fluid was recovered with a vacuum truck. The spill impacted approximately 19,000 sq.ft. of caliche well pad. The spill area will be cleaned up once the frac tanks and equipment have been removed from the area. The spill will be cleaned up in accordance to the NMOCD and BLM remediation guidelines.

Incident ID	
District RP	2RP-2661
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Release volume was greater than 25 bbls
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Tony Sevoie emailed NMOCD and BLM.	

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:
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: <u>Kyle Littrell</u> Title: <u>SH&E Coordinator</u> Signature:  Date: <u>04/02/2019</u> email: <u>Kyle.Littrell@xtoenergy.com</u> Telephone: <u>432-221-7331</u>
<u>OCD Only</u> Received by: _____ Date: _____

Incident ID	
District RP	2RP-2661
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

Incident ID	nnAB1435036006
District RP	2RP-2661
Facility ID	
Application ID	

Closure

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

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

- A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection). Site photographs are included depicting investigation activities.
- Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- Description of remediation activities

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

Printed Name: Kyle Littrell Title: SH&E Coordinator
 Signature:  Date: 04/02/2019
 email: Kyle.Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: Bradford Billings Date: 3/16/2020
 Printed Name: Bradford Billings Title: E.Spec.A



LT Environmental, Inc.
 508 West Stevens Street
 Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier: SS01A	Date: 12/21/2018
Project Name: PLU-CVX-JV-PB #008H	RP Number: 2RP-2661

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long: 32.087867, -103.793453	Field Screening: PID	Hole Diameter: 3 inch	Total Depth: 4 feet
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Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
	< 160	< 10		SS01A@4'	0			CLAY, white to tan
					1			
					2			
					3			
					4			Total Depth 4 feet bgs
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
 508 West Stevens Street
 Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier: SS02A	Date: 12/21/2018
Project Name: PLU-CVX-JV-PB #008H	RP Number: 2RP-2661

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long: 32.087867, -103.793453	Field Screening: PID	Hole Diameter: 3 inch	Method: Backhoe	Total Depth: 4 feet
-------------------------------------	-------------------------	--------------------------	-----------------	------------------------

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
	< 160	< 10		SS02A@4'	0			CLAY, white to tan
					1			
					2			
					3			
					4			Total Depth 4 feet bgs
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
 508 West Stevens Street
 Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier: SS05A	Date: 12/21/2018
Project Name: PLU-CVX-JV-PB #008H	RP Number: 2RP-2661

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long: 32.087867, -103.793453	Field Screening: PID	Hole Diameter: 3 inch	Method: Backhoe	Total Depth: 4 feet
-------------------------------------	-------------------------	--------------------------	-----------------	------------------------

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
	< 160	< 10		SS05A@4'	0			CLAY, white to tan
					1			
					2			
					3			
					4			Total Depth 4 feet bgs
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			





Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

February 27, 2018

Kyle Littrell

LTE

3300 N A St Bldg 1 #103

Midland, TX 79705

TEL: (432) 704-5178

FAX

RE: PLU CVX JV PB 008H

OrderNo.: 1802A34

Dear Kyle Littrell:

Hall Environmental Analysis Laboratory received 5 sample(s) on 2/17/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written in a cursive style.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1802A34

Date Reported: 2/27/2018

CLIENT: LTE

Client Sample ID: SS01

Project: PLU CVX JV PB 008H

Collection Date: 2/15/2018 4:45:00 PM

Lab ID: 1802A34-001

Matrix: SOIL

Received Date: 2/17/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	2/22/2018 10:52:56 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/22/2018 10:52:56 AM
Surr: DNOP	90.2	70-130		%Rec	1	2/22/2018 10:52:56 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/22/2018 12:03:39 AM
Surr: BFB	90.7	15-316		%Rec	1	2/22/2018 12:03:39 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	2/22/2018 12:03:39 AM
Toluene	ND	0.047		mg/Kg	1	2/22/2018 12:03:39 AM
Ethylbenzene	ND	0.047		mg/Kg	1	2/22/2018 12:03:39 AM
Xylenes, Total	ND	0.093		mg/Kg	1	2/22/2018 12:03:39 AM
Surr: 4-Bromofluorobenzene	87.6	80-120		%Rec	1	2/22/2018 12:03:39 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	570	30		mg/Kg	20	2/23/2018 10:29:54 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1802A34

Date Reported: 2/27/2018

CLIENT: LTE

Client Sample ID: SS02

Project: PLU CVX JV PB 008H

Collection Date: 2/15/2018 4:50:00 PM

Lab ID: 1802A34-002

Matrix: SOIL

Received Date: 2/17/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	81	9.7		mg/Kg	1	2/22/2018 11:15:02 AM
Motor Oil Range Organics (MRO)	70	48		mg/Kg	1	2/22/2018 11:15:02 AM
Surr: DNOP	89.4	70-130		%Rec	1	2/22/2018 11:15:02 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/22/2018 12:27:17 AM
Surr: BFB	88.1	15-316		%Rec	1	2/22/2018 12:27:17 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	2/22/2018 12:27:17 AM
Toluene	ND	0.047		mg/Kg	1	2/22/2018 12:27:17 AM
Ethylbenzene	ND	0.047		mg/Kg	1	2/22/2018 12:27:17 AM
Xylenes, Total	ND	0.095		mg/Kg	1	2/22/2018 12:27:17 AM
Surr: 4-Bromofluorobenzene	85.6	80-120		%Rec	1	2/22/2018 12:27:17 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	770	30		mg/Kg	20	2/23/2018 10:42:19 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1802A34

Date Reported: 2/27/2018

CLIENT: LTE

Client Sample ID: SS03

Project: PLU CVX JV PB 008H

Collection Date: 2/15/2018 4:55:00 PM

Lab ID: 1802A34-003

Matrix: SOIL

Received Date: 2/17/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/22/2018 11:37:00 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/22/2018 11:37:00 AM
Surr: DNOP	78.4	70-130		%Rec	1	2/22/2018 11:37:00 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/22/2018 12:50:52 AM
Surr: BFB	85.6	15-316		%Rec	1	2/22/2018 12:50:52 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	2/22/2018 12:50:52 AM
Toluene	ND	0.048		mg/Kg	1	2/22/2018 12:50:52 AM
Ethylbenzene	ND	0.048		mg/Kg	1	2/22/2018 12:50:52 AM
Xylenes, Total	ND	0.097		mg/Kg	1	2/22/2018 12:50:52 AM
Surr: 4-Bromofluorobenzene	81.6	80-120		%Rec	1	2/22/2018 12:50:52 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	340	30		mg/Kg	20	2/23/2018 11:44:24 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1802A34

Date Reported: 2/27/2018

CLIENT: LTE

Client Sample ID: SS04

Project: PLU CVX JV PB 008H

Collection Date: 2/15/2018 5:00:00 PM

Lab ID: 1802A34-004

Matrix: SOIL

Received Date: 2/17/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	2/22/2018 11:59:05 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/22/2018 11:59:05 AM
Surr: DNOP	77.0	70-130		%Rec	1	2/22/2018 11:59:05 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/22/2018 1:14:28 AM
Surr: BFB	91.5	15-316		%Rec	1	2/22/2018 1:14:28 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	2/22/2018 1:14:28 AM
Toluene	ND	0.048		mg/Kg	1	2/22/2018 1:14:28 AM
Ethylbenzene	ND	0.048		mg/Kg	1	2/22/2018 1:14:28 AM
Xylenes, Total	ND	0.095		mg/Kg	1	2/22/2018 1:14:28 AM
Surr: 4-Bromofluorobenzene	87.1	80-120		%Rec	1	2/22/2018 1:14:28 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	470	30		mg/Kg	20	2/23/2018 11:56:49 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1802A34

Date Reported: 2/27/2018

CLIENT: LTE

Client Sample ID: SS05

Project: PLU CVX JV PB 008H

Collection Date: 2/15/2018 5:05:00 PM

Lab ID: 1802A34-005

Matrix: SOIL

Received Date: 2/17/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/22/2018 12:21:10 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/22/2018 12:21:10 PM
Surr: DNOP	83.3	70-130		%Rec	1	2/22/2018 12:21:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/22/2018 1:38:00 AM
Surr: BFB	88.1	15-316		%Rec	1	2/22/2018 1:38:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	2/22/2018 1:38:00 AM
Toluene	ND	0.050		mg/Kg	1	2/22/2018 1:38:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	2/22/2018 1:38:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	2/22/2018 1:38:00 AM
Surr: 4-Bromofluorobenzene	85.3	80-120		%Rec	1	2/22/2018 1:38:00 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	470	30		mg/Kg	20	2/24/2018 12:09:14 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1802A34

27-Feb-18

Client: LTE
Project: PLU CVX JV PB 008H

Sample ID MB-36699	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 36699	RunNo: 49346								
Prep Date: 2/23/2018	Analysis Date: 2/23/2018	SeqNo: 1594228	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID LCS-36699	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 36699	RunNo: 49346								
Prep Date: 2/23/2018	Analysis Date: 2/23/2018	SeqNo: 1594229	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.7	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1802A34

27-Feb-18

Client: LTE
Project: PLU CVX JV PB 008H

Sample ID LCS-36648	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 36648		RunNo: 49309							
Prep Date: 2/21/2018	Analysis Date: 2/22/2018		SeqNo: 1591479		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	84.9	70	130			
Surr: DNOP	3.8		5.000		77.0	70	130			

Sample ID MB-36648	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 36648		RunNo: 49309							
Prep Date: 2/21/2018	Analysis Date: 2/22/2018		SeqNo: 1591480		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.1		10.00		81.0	70	130			

Sample ID 1802A34-001AMS	SampType: MS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: SS01	Batch ID: 36648		RunNo: 49308							
Prep Date: 2/21/2018	Analysis Date: 2/22/2018		SeqNo: 1592033		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	9.5	47.35	2.210	82.0	55.8	125			
Surr: DNOP	3.0		4.735		64.2	70	130			S

Sample ID 1802A34-001AMSD	SampType: MSD		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: SS01	Batch ID: 36648		RunNo: 49308							
Prep Date: 2/21/2018	Analysis Date: 2/22/2018		SeqNo: 1592244		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	39	9.6	47.76	2.210	76.9	55.8	125	5.28	20	
Surr: DNOP	2.9		4.776		60.9	70	130	0	0	S

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1802A34

27-Feb-18

Client: LTE
Project: PLU CVX JV PB 008H

Sample ID MB-36626	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 36626		RunNo: 49302							
Prep Date: 2/20/2018	Analysis Date: 2/21/2018		SeqNo: 1590939		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	890		1000		88.7	15	316			

Sample ID LCS-36626	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 36626		RunNo: 49302							
Prep Date: 2/20/2018	Analysis Date: 2/21/2018		SeqNo: 1590940		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	5.0	25.00	0	116	75.9	131			
Surr: BFB	1000		1000		103	15	316			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1802A34

27-Feb-18

Client: LTE
Project: PLU CVX JV PB 008H

Sample ID MB-36626	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 36626		RunNo: 49302							
Prep Date: 2/20/2018	Analysis Date: 2/21/2018		SeqNo: 1590982		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.87		1.000		87.0	80	120			

Sample ID LCS-36626	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 36626		RunNo: 49302							
Prep Date: 2/20/2018	Analysis Date: 2/21/2018		SeqNo: 1590983		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	107	77.3	128			
Toluene	1.1	0.050	1.000	0	106	79.2	125			
Ethylbenzene	1.0	0.050	1.000	0	103	80.7	127			
Xylenes, Total	3.2	0.10	3.000	0	106	81.6	129			
Surr: 4-Bromofluorobenzene	0.93		1.000		92.7	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

Sample Log-In Check List

Client Name: **LTE MIDLAND**

Work Order Number: **1802A34**

RcptNo: **1**

Received By: **Ashley Gallegos** 2/17/2018 10:00:00 AM

Completed By: **Ashley Gallegos** 2/19/2018 3:30:49 PM

Reviewed By: *AG* 02/19/18

AG
AG
 Labeled by: SRE 02/19/18

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes No NA
 4. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 5. Sample(s) in proper container(s)? Yes No
 6. Sufficient sample volume for indicated test(s)? Yes No
 7. Are samples (except VOA and ONG) properly preserved? Yes No
 8. Was preservative added to bottles? Yes No NA
 9. VOA vials have zero headspace? Yes No No VOA Vials
 10. Were any sample containers received broken? Yes No
 11. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 12. Are matrices correctly identified on Chain of Custody? Yes No
 13. Is it clear what analyses were requested? Yes No
 14. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

of preserved bottles checked for pH: _____
 (<2 or >12 unless noted)
 Adjusted? _____
 Checked by: _____

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

16. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.0	Good	Yes			

Chain-of-Custody Record

Client: LTE
 Project Name: Permian
 Mailing Address: 3500 N. A St. Bldg 103
Midland TX 79705
 Phone #: 432-704-5178
 email or Fax#: Abaker@ltenv.com
 QA/QC Package: Level 4 (Full Validation)
 Standard
 Accreditation: NELAP Other
 EDD (Type) PDF

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
2-15	1645	S	SS01	1-4oz	Cool	-001
	1650		SS02			-002
	1655		SS03			-003
	1700		SS04			-004
	1705		SS05			-005

Relinquished by: [Signature] Date: 2/16/18 Time: 1530
 Relinquished by: [Signature] Date: 2/16/18 Time: 1530
 Relinquished by: [Signature] Date: 02/17/18 Time: 10:00

Turn-Around Time: Standard Rush
 Project #: 30-015-42630
 Project Manager: XTO - Kyle Litrell
Direct Bill
 Sampler: Danny Burns
 On Ice: Yes No
 Sample Temperature: 1.2 to 1.8 D

Analysis Request	Result
BTEX + MTBE + TMBs (8021)	X
BTEX + MTBE + TPH (Gas only)	X
TPH Method 8015B (Gas/Diesel)	X
TPH (Method 418.1)	X
EDB (Method 504.1)	
8310 (PNA or PAH)	
RCRA 8 Metals	
Anions (F ⁻ , Cl ⁻ , NO ₂ ⁻ , PO ₄ ⁻ , SO ₄ ⁻)	
8081 Pesticides / 8082 PCB's	
8260B (VOA)	
8270 (Semi-VOA)	X
Chloride (300.1)	X
Air Bubbles (Y or N)	

Received by: [Signature] Date: 2/16/18 Time: 1530
 Received by: [Signature] Date: 02/17/18 Time: 10:00

HALL ENVIRONMENTAL ANALYSIS LABORATORY
 www.hallenvironmental.com
 4901 Hawkins NE - Albuquerque, NM 87109
 Tel. 505-345-3975 Fax 505-345-4107

Analysis Request	Result
BTEX + MTBE + TMBs (8021)	X
BTEX + MTBE + TPH (Gas only)	X
TPH Method 8015B (Gas/Diesel)	X
TPH (Method 418.1)	X
EDB (Method 504.1)	
8310 (PNA or PAH)	
RCRA 8 Metals	
Anions (F ⁻ , Cl ⁻ , NO ₂ ⁻ , PO ₄ ⁻ , SO ₄ ⁻)	
8081 Pesticides / 8082 PCB's	
8260B (VOA)	
8270 (Semi-VOA)	X
Chloride (300.1)	X
Air Bubbles (Y or N)	

Remarks: API: 30-015-42630
2RP-2661

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Analytical Report 609805

for

LT Environmental, Inc.

Project Manager: Adrian Baker

PLU CVX JV PB #008H

04-JAN-19

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



04-JAN-19

Project Manager: **Adrian Baker**
LT Environmental, Inc.
4600 W. 60th Avenue
Arvada, CO 80003

Reference: XENCO Report No(s): **609805**
PLU CVX JV PB #008H
Project Address: Eddy, NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 609805. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 609805 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer
Project Assistant

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 609805



LT Environmental, Inc., Arvada, CO

PLU CVX JV PB #008H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS05A	S	12-21-18 09:30	4 ft	609805-001
SS02A	S	12-21-18 09:40	4 ft	609805-002
SS01A	S	12-21-18 09:50	4 ft	609805-003



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PB #008H

Project ID:
Work Order Number(s): 609805

Report Date: 04-JAN-19
Date Received: 12/27/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3074729 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3074784 TPH by SW8015 Mod

Surrogate 1-Chlorooctane, Surrogate o-Terphenyl recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 609805-001,609805-002,609805-003.



Certificate of Analysis Summary 609805



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PB #008H

Project Id:
Contact: Adrian Baker
Project Location: Eddy, NM

Date Received in Lab: Thu Dec-27-18 11:36 am
Report Date: 04-JAN-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	609805-001	609805-002	609805-003			
	<i>Field Id:</i>	SS05A	SS02A	SS01A			
	<i>Depth:</i>	4- ft	4- ft	4- ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Dec-21-18 09:30	Dec-21-18 09:40	Dec-21-18 09:50			
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-03-19 08:15	Jan-03-19 08:15	Jan-03-19 08:15			
	<i>Analyzed:</i>	Jan-03-19 11:48	Jan-03-19 12:08	Jan-03-19 12:30			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
	Benzene	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200			
	Toluene	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200			
	Ethylbenzene	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200			
	m,p-Xylenes	<0.00401 0.00401	<0.00403 0.00403	<0.00399 0.00399			
	o-Xylene	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200			
Total Xylenes	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200				
Total BTEX	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200				
Inorganic Anions by EPA 300	<i>Extracted:</i>	Jan-03-19 10:30	Jan-03-19 10:30	Jan-03-19 10:30			
	<i>Analyzed:</i>	Jan-03-19 20:30	Jan-03-19 20:48	Jan-03-19 20:54			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride	29.8 4.98	34.7 4.95	<4.99 4.99				
TPH by SW8015 Mod	<i>Extracted:</i>	Jan-02-19 17:00	Jan-02-19 17:00	Jan-02-19 17:00			
	<i>Analyzed:</i>	Jan-04-19 01:41	Jan-04-19 02:00	Jan-04-19 02:41			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0	<15.0 15.0	<15.0 15.0			
	Diesel Range Organics (DRO)	<15.0 15.0	<15.0 15.0	<15.0 15.0			
Motor Oil Range Hydrocarbons (MRO)	<15.0 15.0	<15.0 15.0	<15.0 15.0				
Total TPH	<15.0 15.0	<15.0 15.0	<15.0 15.0				

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer
 Project Assistant



Certificate of Analytical Results 609805



LT Environmental, Inc., Arvada, CO

PLU CVX JV PB #008H

Sample Id: SS05A	Matrix: Soil	Date Received: 12.27.18 11.36
Lab Sample Id: 609805-001	Date Collected: 12.21.18 09.30	Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: OJS		% Moisture:
Analyst: OJS	Date Prep: 01.03.19 10.30	Basis: Wet Weight
Seq Number: 3074716		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	29.8	4.98	mg/kg	01.03.19 20.30		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ALJ	% Moisture:
Analyst: ALJ	Date Prep: 01.02.19 17.00
Seq Number: 3074784	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.04.19 01.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.04.19 01.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.04.19 01.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.04.19 01.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	61	%	70-135	01.04.19 01.41	**
o-Terphenyl	84-15-1	61	%	70-135	01.04.19 01.41	**

LT Environmental, Inc., Arvada, CO

PLU CVX JV PB #008H

Sample Id: SS05A	Matrix: Soil	Date Received: 12.27.18 11.36
Lab Sample Id: 609805-001	Date Collected: 12.21.18 09.30	Sample Depth: 4 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: SCM		% Moisture:
Analyst: SCM	Date Prep: 01.03.19 08.15	Basis: Wet Weight
Seq Number: 3074729		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.03.19 11.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.03.19 11.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.03.19 11.48	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.03.19 11.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.03.19 11.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.03.19 11.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.03.19 11.48	U	1
		%					
Surrogate	Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	01.03.19 11.48		
1,4-Difluorobenzene	540-36-3	91	%	70-130	01.03.19 11.48		



Certificate of Analytical Results 609805



LT Environmental, Inc., Arvada, CO

PLU CVX JV PB #008H

Sample Id: SS02A	Matrix: Soil	Date Received: 12.27.18 11.36
Lab Sample Id: 609805-002	Date Collected: 12.21.18 09.40	Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: OJS		% Moisture:
Analyst: OJS	Date Prep: 01.03.19 10.30	Basis: Wet Weight
Seq Number: 3074716		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	34.7	4.95	mg/kg	01.03.19 20.48		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ALJ	% Moisture:
Analyst: ALJ	Date Prep: 01.02.19 17.00
Seq Number: 3074784	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.04.19 02.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.04.19 02.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.04.19 02.00	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.04.19 02.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	57	%	70-135	01.04.19 02.00	**
o-Terphenyl	84-15-1	55	%	70-135	01.04.19 02.00	**



Certificate of Analytical Results 609805



LT Environmental, Inc., Arvada, CO PLU CVX JV PB #008H

Sample Id: SS02A	Matrix: Soil	Date Received: 12.27.18 11.36
Lab Sample Id: 609805-002	Date Collected: 12.21.18 09.40	Sample Depth: 4 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: SCM		% Moisture:
Analyst: SCM	Date Prep: 01.03.19 08.15	Basis: Wet Weight
Seq Number: 3074729		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.03.19 12.08	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.03.19 12.08	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.03.19 12.08	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.03.19 12.08	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.03.19 12.08	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.03.19 12.08	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.03.19 12.08	U	1
		%					
Surrogate	Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	116	%	70-130	01.03.19 12.08		
1,4-Difluorobenzene	540-36-3	87	%	70-130	01.03.19 12.08		

LT Environmental, Inc., Arvada, CO

PLU CVX JV PB #008H

Sample Id: SS01A	Matrix: Soil	Date Received: 12.27.18 11.36
Lab Sample Id: 609805-003	Date Collected: 12.21.18 09.50	Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: OJS		% Moisture:
Analyst: OJS	Date Prep: 01.03.19 10.30	Basis: Wet Weight
Seq Number: 3074716		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	01.03.19 20.54	U	1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ALJ	% Moisture:
Analyst: ALJ	Date Prep: 01.02.19 17.00
Seq Number: 3074784	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.04.19 02.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.04.19 02.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.04.19 02.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.04.19 02.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	66	%	70-135	01.04.19 02.41	**
o-Terphenyl	84-15-1	66	%	70-135	01.04.19 02.41	**



Certificate of Analytical Results 609805



LT Environmental, Inc., Arvada, CO

PLU CVX JV PB #008H

Sample Id: SS01A	Matrix: Soil	Date Received: 12.27.18 11.36
Lab Sample Id: 609805-003	Date Collected: 12.21.18 09.50	Sample Depth: 4 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: SCM		% Moisture:
Analyst: SCM	Date Prep: 01.03.19 08.15	Basis: Wet Weight
Seq Number: 3074729		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.03.19 12.30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.03.19 12.30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.03.19 12.30	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.03.19 12.30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.03.19 12.30	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.03.19 12.30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.03.19 12.30	U	1
		%					
Surrogate	Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	82	%	70-130	01.03.19 12.30		
4-Bromofluorobenzene	460-00-4	116	%	70-130	01.03.19 12.30		



QC Summary 609805

LT Environmental, Inc.

PLU CVX JV PB #008H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3074716
 MB Sample Id: 7669107-1-BLK

Matrix: Solid
 LCS Sample Id: 7669107-1-BKS

Prep Method: E300P
 Date Prep: 01.03.19
 LCSD Sample Id: 7669107-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	267	107	264	106	90-110	1	20	mg/kg	01.03.19 18:48	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3074716
 Parent Sample Id: 609803-003

Matrix: Soil
 MS Sample Id: 609803-003 S

Prep Method: E300P
 Date Prep: 01.03.19
 MSD Sample Id: 609803-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	54.6	251	356	120	360	122	90-110	1	20	mg/kg	01.03.19 19:06	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3074716
 Parent Sample Id: 609805-001

Matrix: Soil
 MS Sample Id: 609805-001 S

Prep Method: E300P
 Date Prep: 01.03.19
 MSD Sample Id: 609805-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	29.8	249	277	99	297	107	90-110	7	20	mg/kg	01.03.19 20:36	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3074784
 MB Sample Id: 7669207-1-BLK

Matrix: Solid
 LCS Sample Id: 7669207-1-BKS

Prep Method: TX1005P
 Date Prep: 01.02.19
 LCSD Sample Id: 7669207-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	795	80	819	82	70-135	3	20	mg/kg	01.03.19 19:59	
Diesel Range Organics (DRO)	<8.13	1000	905	91	914	92	70-135	1	20	mg/kg	01.03.19 19:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		128		129		70-135	%	01.03.19 19:59
o-Terphenyl	104		106		121		70-135	%	01.03.19 19:59

MS/MSD Percent Recovery
 Relative Percent Difference
 LCS/LCSD Recovery
 Log Difference

[D] = 100*(C-A) / B
 RPD = 200* |(C-E) / (C+E)|
 [D] = 100 * (C) / [B]
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result
 MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec



QC Summary 609805

LT Environmental, Inc.

PLU CVX JV PB #008H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3074784

Parent Sample Id: 609634-040

Matrix: Soil

MS Sample Id: 609634-040 S

Prep Method: TX1005P

Date Prep: 01.02.19

MSD Sample Id: 609634-040 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	868	87	857	86	70-135	1	20	mg/kg	01.03.19 21:00	
Diesel Range Organics (DRO)	<8.12	999	973	97	976	98	70-135	0	20	mg/kg	01.03.19 21:00	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	144	**	144	**	70-135	%	01.03.19 21:00
o-Terphenyl	121		120		70-135	%	01.03.19 21:00

Analytical Method: BTEX by EPA 8021B

Seq Number: 3074729

MB Sample Id: 7669169-1-BLK

Matrix: Solid

LCS Sample Id: 7669169-1-BKS

Prep Method: SW5030B

Date Prep: 01.03.19

LCSD Sample Id: 7669169-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0960	96	0.125	125	70-130	26	35	mg/kg	01.03.19 08:59	
Toluene	<0.00200	0.100	0.0896	90	0.105	105	70-130	16	35	mg/kg	01.03.19 08:59	
Ethylbenzene	<0.00200	0.100	0.100	100	0.128	128	70-130	25	35	mg/kg	01.03.19 08:59	
m,p-Xylenes	<0.00401	0.200	0.214	107	0.253	127	70-130	17	35	mg/kg	01.03.19 08:59	
o-Xylene	<0.00200	0.100	0.0982	98	0.122	122	70-130	22	35	mg/kg	01.03.19 08:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	84		84		98		70-130	%	01.03.19 08:59
4-Bromofluorobenzene	104		74		98		70-130	%	01.03.19 08:59

Analytical Method: BTEX by EPA 8021B

Seq Number: 3074729

Parent Sample Id: 609809-017

Matrix: Soil

MS Sample Id: 609809-017 S

Prep Method: SW5030B

Date Prep: 01.03.19

MSD Sample Id: 609809-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.102	102	0.107	108	70-130	5	35	mg/kg	01.03.19 09:41	
Toluene	<0.00200	0.100	0.0846	85	0.0818	82	70-130	3	35	mg/kg	01.03.19 09:41	
Ethylbenzene	<0.00200	0.100	0.0897	90	0.0779	78	70-130	14	35	mg/kg	01.03.19 09:41	
m,p-Xylenes	<0.00401	0.200	0.204	102	0.190	95	70-130	7	35	mg/kg	01.03.19 09:41	
o-Xylene	<0.00200	0.100	0.109	109	0.100	101	70-130	9	35	mg/kg	01.03.19 09:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		94		70-130	%	01.03.19 09:41
4-Bromofluorobenzene	108		89		70-130	%	01.03.19 09:41

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* |(C-E) / (C+E)|
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



Sending the Standard since 1990
 Stafford, Texas (281-240-4200)
 Dallas Texas (214-902-0300)

CHAIN OF C STUDY

Page 1 of 1

San Antonio, Texas (210-508-3334)
 Midland, Texas (432-704-5251)

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Phoenix, Arizona (480-355-0900)

Xenoco Quota \$

Xenoco Job \$

109905

Client / Reporting Information

Company Name / Branch: Perkins Office
 Company Address: 3300 W. St. Building Unit 103 Midland, TX 79702
 Email: ababerg@stew.com Phone No: (432) 704-5178
 Project Contact: Adrian Baker

Project Information

Project Name/Number: PLU CVX DVPB #008H
 Project Location: EDDY Wm
 Invoice To: XTO Energy - Kyle Ethell
 PO Number: 01291855

Analytical Information

Matrix Codes

- W = Water
- S = Solid/Solid
- GW = Ground Water
- DW = Drinking Water
- P = Product
- SW = Surface water
- SL = Sludge
- OW = Ocean/Sea Water
- WI = Wipe
- O = Oil
- WW = Waste Water
- A = Air

No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Notes
1	SS05A	4'	12/2/08	9:30	S	1									
2	SS02A	4'		9:40	S	1									
3	SS1A	4'		9:50	S	1									
4															
5															
6															
7															
8															
9															
10															

Field Comments

Phase 1/15 Tr to one
 10:30, 10:40, 10:50

Turnaround Time (Business days) Same Day TAT 5 Day TAT Next Day EMERGENCY 7 Day TAT 2 Day EMERGENCY Contract TAT 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

DATE RECEIVED BY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

Relinquished by Sampler:	Date Time:	Received By:	Date Time:
<i>[Signature]</i>	12/2/08 11:30	<i>[Signature]</i>	12/2/08 11:30
Relinquished by:	Date Time:	Received By:	Date Time:
<i>[Signature]</i>		<i>[Signature]</i>	
Relinquished by:	Date Time:	Received By:	Date Time:
<i>[Signature]</i>		<i>[Signature]</i>	

Level II Std QC Level III Std QC- Forms Level IV (Full Data Pkg /raw data) Level 3 (CLP Forms) TRRP Level IV TRRP Checklist

FED-EX / UPS: Tracking #

On Ice Cooler Temp. 0.5/0.2 Thermo. Corr. Factor 1180

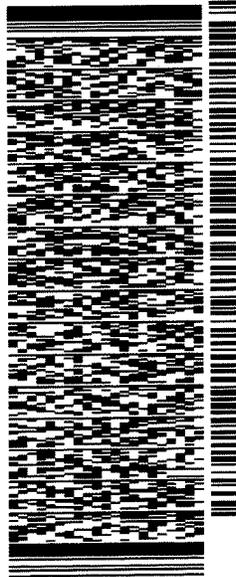
Notes: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenoco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenoco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenoco. A minimum charge of \$75 will be applied to each project. Xenoco's liability will be limited to the cost of samples. Any samples received by Xenoco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

ORIGIN ID:CAOA (573) 887-6245
 XENCO
 PAC N MAIL
 910 W PIERCE ST
 CARLSBAD, NM 88220
 UNITED STATES US

SHIP DATE: 28DEC18
 ACT WGT: 37.00 LB
 CAD: 101813706/NET 4040
 DIMS: 26x14x16 IN
 BILL RECIPIENT

TO HOLD FOR XENCO
 FEDEX EXPRESS SHIP CENTER
 FEDEX SHIP CENTER
 3600 COUNTY RD 1276 S

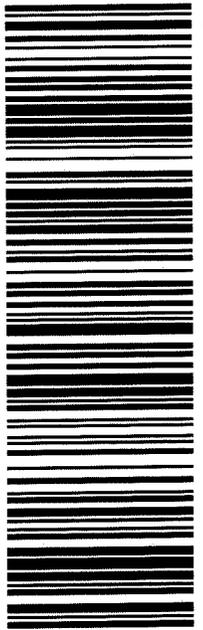
MIDLAND TX 79711
 (806) 794-1296 REF:
 INV/ PO DEPT:



552J2/E4AF/DCA5

TRK# 7740 6338 2243
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After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
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3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 12/27/2018 11:36:00 AM

Work Order #: 609805

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6*Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 12/27/2018
 Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 12/27/2018
 Jessica Kramer





View northwest of pump jack east of release area.

Project: 012918055	XTO Energy, Inc. PLU-CVX-JV-BS 008H	 <i>Advancing Opportunity</i>
July 22, 2018	Photographic Log	



View west of release area.

Project: 012918055	XTO Energy, Inc. PLU-CVX-JV-BS 008H	 <i>Advancing Opportunity</i>
December 11, 2018	Photographic Log	



View northwest of release area behind pump jack.

Project: 012918055	XTO Energy, Inc. PLU-CVX-JV-BS 008H	 <i>Advancing Opportunity</i>
December 11, 2018	Photographic Log	