



LT Environmental, Inc.

3300 North "A" Street
Building 1, Unit 103
Midland, Texas 79705
432.704.5178

October 18, 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 150
Remediation Permit Numbers 2RP-3197
Eddy County, New Mexico**

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request report detailing site assessment and soil sampling activities at the Poker Lake Unit (PLU) 150 (Site), located in Unit A, Section 6, Township 24 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment and soil sampling activities was to assess for the presence or absence of impacted soil resulting from a produced water/packer fluid release at the Site.

The release is included in the Compliance Agreement for Remediation for Historical Releases (Compliance Agreement) between XTO and the New Mexico Oil Conservation Division (NMOCD) effective November 13, 2018. The purpose of the Compliance Agreement is to ensure 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 the release occurred prior to August 14, 2018, the effective date of 19.15.29 NMAC; however, remediation was ongoing.

RELEASE BACKGROUND

On August 10, 2015, the packing fluid containment overflowed onto the well pad west of the wellhead. Approximately 11 barrels (bbls) of produced water/packer fluid were released. The former operator reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 (Form C-141) on August 11, 2015, and was assigned Remediation Permit (RP) Number 2RP-3197 (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. Based on the site assessment activities and results of the soil sampling events, XTO is requesting no further action for this release event.



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SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). 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 with depth to water data is C 02108, located approximately 7,994 feet southeast of the Site. The water well has a depth to groundwater of 186 feet and a total depth of 200 feet. Ground surface elevation at the water well location is 3,196 feet above mean sea level (AMSL), which is approximately 72 feet lower in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is an intermittent stream located approximately 1,911 feet northeast 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 located in a medium potential karst area.

CLOSURE CRITERIA

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

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

SITE ASSESSMENT AND SOIL SAMPLING ACTIVITIES

On February 12, 2018, LTE personnel inspected the Site to evaluate the release extent. The PLU 150 well was plugged and abandoned, and the well pad was reclaimed. No visible signs of the historical release were identified. An LTE scientist collected five preliminary soil samples (SS1 through SS5) in the historical release area to assess for potential soil impacts. The soil sample locations, depicted on Figure 2, were selected based on information provided on the initial Form C-141 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 from a depth of 1 foot bgs.

On October 11, 2019, LTE personnel returned to the site to collect vertical delineation soil samples via hand auger, to confirm the absence of impacted soil in the release area. Soil samples





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SS01A through SS05A were collected from a depth of 2 feet bgs at the SS01 through SS05 preliminary soil sample locations and soil samples SS06/SS06A were collected from depths of 0.5 feet and two feet bgs west of the wellhead. Soil was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for each sample location were logged on lithologic/soil sampling logs, which are included in Attachment 2. The 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. Photographs are included in Attachment 3.

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

ANALYTICAL RESULTS

Laboratory analytical results indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in soil samples SS01/SS01A through SS06/SS06A collected from depths ranging from 0.5 feet to 2 feet bgs. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 4.

CLOSURE REQUEST

Site assessment and soil sampling activities were conducted to assess for potential soil impacts resulting from the August 10, 2015, produced water release at the Site. Laboratory analytical results for soil samples SS01/SS01A through SS06/SS06A, collected from depths ranging from 0.5 feet to 2 feet bgs, indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria and no further remediation was required.

Based on visual observations, field screening activities, and laboratory analytical results, no impacted soil was identified as a result of the historical release. XTO requests no further action for RP Number 2RP-3197. An updated NMOCD Form C-141 is included as Attachment 1.

RECLAMATION

Seeding was conducted at the Site during reclamation activities in 2017. During site assessment activities at this plugged and abandoned well site, LTE observed immature vegetation, primarily





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in the form of shrubs with little to no grass. There is a bare area (less than 3 percent vegetation) where seeding appears to have been unsuccessful. XTO will conduct another seeding event prior to winter to promote revegetation with additional cover.

If you have any questions or comments, please do not hesitate to contact Ms. Ashley Ager at (970) 385-1096.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink that reads "Aimee Cole".

Aimee Cole
Project Environmental Scientist

A handwritten signature in black ink that reads "Ashley L. Ager".

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Mike Bratcher, NMOCD
Bureau of Land Management

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-3197)
Attachment 2 Lithologic/Soil Sample Logs
Attachment 3 Photographic Log
Attachment 4 Laboratory Analytical Reports



FIGURES



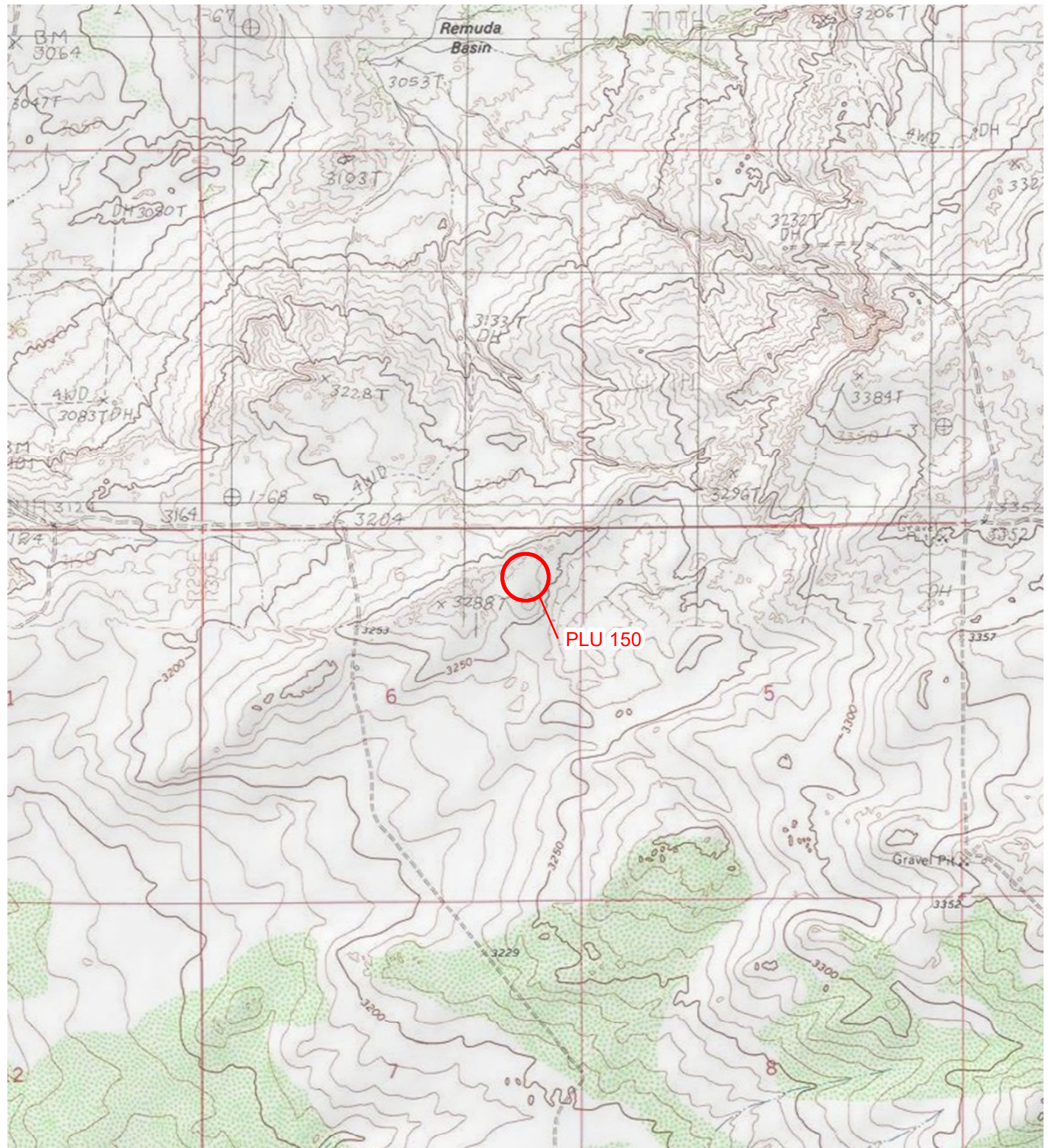
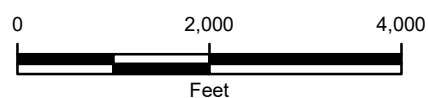


IMAGE COURTESY OF ESRI/USGS

LEGEND

 SITE LOCATION



NOTE: REMEDIATION PERMIT
NUMBER 2RP-3197

FIGURE 1
SITE LOCATION MAP
POKER LAKE UNIT 150
UNIT A SEC 6 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
 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

SS02 02/12/2018 B: <0.00201 BTEX: <0.00201 GRO+DRO: <15.0 TPH: <15.0 Cl: 28.4	SS02A@2' 10/11/2019 B: <0.00100 BTEX: <0.00100 GRO+DRO: <49.8 TPH: <49.8 Cl: <9.96
---	--

SS03 02/12/2018 B: <0.00199 BTEX: <0.00199 GRO+DRO: <15.0 TPH: <15.0 Cl: <4.89	SS03A@2' 10/11/2019 B: <0.00100 BTEX: <0.00100 GRO+DRO: <50.2 TPH: <50.2 Cl: <9.92
--	--

SS01 02/12/2018 B: <0.00200 BTEX: <0.00200 GRO+DRO: 250 TPH: 299 Cl: 754	SS01A@2' 10/11/2019 B: <0.000994 BTEX: <0.000994 GRO+DRO: <50.2 TPH: <50.2 Cl: 270
--	--

SS06@0.5' 10/11/2019 B: <0.00100 BTEX: <0.00100 GRO+DRO: <50.1 TPH: <50.1 Cl: 21.4
--

SS06A@2' 10/11/2019 B: <0.00100 BTEX: <0.00100 GRO+DRO: 86.0 TPH: 86.0 Cl: <10.1
--

SS05 02/12/2018 B: <0.00200 BTEX: <0.00200 GRO+DRO: 85.3 TPH: 101 Cl: 122

SS05A@2' 10/11/2019 B: <0.00101 BTEX: <0.00101 GRO+DRO: <50.0 TPH: <50.0 Cl: 18.8

SS04 02/12/2018 B: <0.00200 BTEX: <0.00200 GRO+DRO: <15.0 TPH: <15.0 Cl: <4.98	SS04A@2' 10/11/2019 B: <0.00101 BTEX: <0.00101 GRO+DRO: <50.2 TPH: <50.2 Cl: <9.98
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LEGEND

● PRELIMINARY SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

⊕ PLUGGED AND ABANDONED WELLHEAD

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-3197

IMAGE COURTESY OF ESRI

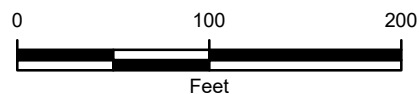


FIGURE 2
 SOIL SAMPLE LOCATIONS
 POKER LAKE UNIT 150
 UNIT A SEC 6 T24S R30E
 EDDY COUNTY, NEW MEXICO
 XTO ENERGY, INC.



TABLES



TABLE 1
SOIL ANALYTICAL RESULTS

POKER LAKE UNIT 150
REMEDIATION PERMIT NUMBER 2RP-3197
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS01	1	02/12/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	250	49.0	250	299	754
SS02	1	02/12/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	28.4
SS03	1	02/12/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<4.89
SS04	1	02/12/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.98
SS05	1	02/12/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	85.3	15.6	85.3	101	122
SS01A	2	10/11/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<50.2	<50.2	<50.2	<50.2	<50.2	270
SS02A	2	10/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<49.8	<49.8	<49.8	<49.8	<49.8	<9.96
SS03A	2	10/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	<9.92
SS04A	2	10/11/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	<9.98
SS05A	2	10/11/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.0	<50.0	<50.0	<50.0	<50.0	18.8
SS06	0.5	10/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1	21.4
SS06A	2	10/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.0	86.0	<50.0	86.0	86.0	<10.1
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

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

MRO - motor oil range organics

NMAC - New Mexico Administrative Code

NMOCD - New Mexico Oil Conservation Division

NE - not established

TPH - total petroleum hydrocarbons

Bold - indicates result exceeds the applicable regulatory standard

< - indicates result is below laboratory reporting limits

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

ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-3197)

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

nAB1522439496 **OPERATOR** ☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P. 360737	Contact: Bradley Blevins
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: PLU 150	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner:	API No. 3001531538
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	6	24S	30E	760		810		Eddy

Latitude: 32.25193 Longitude: 103.91479

NATURE OF RELEASE

Type of Release: Produced Water- Packer Fluid	Volume of Release: 11 barrels	Volume Recovered: None
Source of Release: Packer fluid containment overflowed	Date and Hour of Occurrence: 8-10-15 @ 4:30pm	Date and Hour of Discovery: 8-10-15 @ 4:45pm
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse	

NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 11 2015

RECEIVED

Describe Cause of Problem and Remedial Action Taken.*

BOPCO EHS was notified of a release that occurred at the PLU 150 location. A packing fluid containment overflowed, releasing 11 barrels of fluid to the ground surface. No fluid was recovered.

Describe Area Affected and Cleanup Action Taken.*

The spill impacted an area west of the wellhead on the caliche pad and a small portion of the interim reclamation/ pit area. No fluid was recovered.

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.

OIL CONSERVATION DIVISION

Signature: <i>Bradley Blevins</i>	Approved by Environmental Specialist: <i>[Signature]</i>	
Printed Name: Bradley Blevins	Approval Date: 8/11/15	Expiration Date: N/A
Title: Assistant Remediation Foreman	Conditions of Approval:	
E-mail Address: bblevins@basspet.com	Attached <input type="checkbox"/>	
Date: 8-11-15 Phone: 432-214-3704	Remediation per O.C.D. Rules & Guidelines	

SUBMIT REMEDIATION PROPOSAL NO
LATER THAN: 9/11/15

2RP-3197

* Attach Additional Sheets If Necessary

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-3197
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 #: 2RP-3197
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude N 32.25193 Longitude W 103.91479
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Poker Lake Unit 150	Site Type: Production Well Facility
Date Release Discovered: 8/10/2015	API# (if applicable): 30-015-31538

Unit Letter	Section	Township	Range	County
A	6	24S	30E	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): 0
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls): 11	Volume Recovered (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

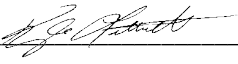
Packing fluid containment overflowed, releasing 11 barrels of fluid to the ground surface.

Incident ID	
District RP	2RP-3197
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: N/A	
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 Supervisor</u>
Signature: 	Date: <u>10-18-2019</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-3197
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?	<u>>100</u> (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

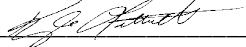
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, 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.

State of New Mexico
Oil Conservation Division

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Incident ID	
District RP	2RP-3197
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E SupervisorSignature:  Date: 10-18-2019email: Kyle Littrell@xtoenergy.com Telephone: (432)-221-7331**OCD Only**

Received by: _____ Date: _____

Incident ID	
District RP	2RP-3197
Facility ID	
Application ID	

Closure

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 10-18-2019

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: Jocelyn Harimon Date: 06/27/2022

Printed Name: _____ Title: _____

ATTACHMENT 2: LITHOLOGIC / SOIL SAMPLE LOGS



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

Compliance · Engineering · Remediation

Identifier:

SS01A

Date:

10-11-19

Project Name:

PLU 150

RP Number:

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: L.A.D.

Method: Auger

Hole Diameter:

Total Depth: 2'

Lat/Long:

32.2516962, -103.9148464

Field Screening: CHLORIDES, PID.

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Moist	1.4 (179.2)	0.3	No	1	0	2'		Caliche / sand mix, dark brown no odor, light clumping, poor plasticity poorly graded, silty sand, no organics
					1			
					2			
					3			
					4			
					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:

10-11-19

Project Name:

PLU 150

RP Number:

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: L.A.D.

Method: Auger

Lat/Long:

32.2516962, -103.9148404

Field Screening: CHLORIDES, PID.


Hole Diameter:


Total Depth:


2'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Moist	0.4 (17.2)	0.2	None	1	0	2'		Light brown, no odor, moist, no clumping, no plasticity, poorly graded, silty sand, no organics
					1			
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 <p>LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220</p> <p>Compliance · Engineering · Remediation</p>		Identifier: SS03A	Date: 10-11-19					
		Project Name: PLU 150	RP Number:					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: L.A.D.	Method: Auger					
Lat/Long: 32.2516962, -103.9148404		Field Screening: CHLORIDES, PID.	Total Depth: 2'					
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Moist	0.4 (47.2)	0.1	None	1	0	2'		Dark brown, no odor, moist, light clumping, low plasticity, poorly graded, silty sand, no organics
					1			
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 <p>LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation</p>		Identifier: SS04A	Date: 10-11-19					
		Project Name: PLU 150	RP Number:					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: L.A.D.	Method: Auger					
Lat/Long: 32.2510962, -103.9148404		Field Screening: CHLORIDES, PID.	Hole Diameter: Total Depth: 2'					
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Moist	0.2 (47.2)	0.1	No	1	0	2'		Dark brown, caliche rocks mixed in, no odor, moist, fair clumping, low glossiness, poorly graded, silty sand majority, no organics
					1			
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: S505A	Date: 10-11-19					
		Project Name: PLU 150	RP Number:					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: L.A.D.	Method: Auger					
Lat/Long: 32.2516962, -103.9148909		Field Screening: CHLORIDES, PID.	Hole Diameter:					
Total Depth: 2'								
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
slight	0.6 (17.2)	0.4	No	1	0	2'		Dark brown, no odor, moist, light clumping, low plasticity, poorly graded, silty sand, no organics
					1			
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

506

Date:

10-11-19

Project Name:

PLU 150

RP Number:

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: L.A.D.

Method:

Lat/Long:

32.2516962, -105.9148404

Field Screening: CHLORIDES, PID.

Hole Diameter:

Total Depth:

Comments:


Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Moist	0.2 (47.2)	0.2 (6.0)	None	1	0 1	0.5'		Light brown, no odor, moist, no clumping, no plasticity, silty sand with more sand, trace organics
Moist	0.4 (174.2)	0.0	None	2	2 3 4 5 6 7 8 9 10 11 12	2'		Dark brown, no odor, moist, low clumping, low plasticity, silty sand, no organics

ATTACHMENT 3: PHOTOGRAPHIC LOG






North facing view of the release area and reclaimed well pad.

Project: 012918050	XTO Energy, Inc. Poker Lake Unit 150	 <i>Advancing Opportunity</i>
October 11, 2019	Photographic Log	




Northwest facing view of the release area and reclaimed well pad.

Project: 012918050	XTO Energy, Inc. Poker Lake Unit 150	 <i>Advancing Opportunity</i>
October 11, 2019	Photographic Log	



West facing view of the release area and reclaimed well pad.

Project: 012918050	XTO Energy, Inc. Poker Lake Unit 150	 Advancing Opportunity
October 11, 2019	Photographic Log	

ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS



Analytical Report 576507

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 150

22-FEB-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):

Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)

Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)

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

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



22-FEB-18

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

Reference: XENCO Report No(s): **576507**
PLU 150
Project Address: 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) 576507. 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. 576507 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,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Odessa Laboratory Director

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 576507



LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	02-12-18 15:00	12 In	576507-001
SS02	S	02-12-18 15:05	12 In	576507-002
SS03	S	02-12-18 15:10	12 In	576507-003
SS04	S	02-12-18 15:15	12 In	576507-004
SS05	S	02-12-18 15:20	12 In	576507-005



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 150

Project ID:

Work Order Number(s): 576507

Report Date: 22-FEB-18

Date Received: 02/14/2018

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3041581 BTEX by EPA 8021B

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

Batch: LBA-3041711 BTEX by EPA 8021B

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

Batch: LBA-3041820 BTEX by EPA 8021B

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



Certificate of Analysis Summary 576507

LT Environmental, Inc., Arvada, CO

Project Name: PLU 150



Project Id:

Contact: Adrian Baker

Project Location: NM

Date Received in Lab: Wed Feb-14-18 06:00 pm

Report Date: 22-FEB-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	576507-001	576507-002	576507-003	576507-004	576507-005	
	<i>Field Id:</i>	SS01	SS02	SS03	SS04	SS05	
	<i>Depth:</i>	12- In	12- In	12- In	12- In	12- In	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Feb-12-18 15:00	Feb-12-18 15:05	Feb-12-18 15:10	Feb-12-18 15:15	Feb-12-18 15:20	
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-16-18 16:00	Feb-16-18 10:00	Feb-19-18 09:30	Feb-16-18 10:00	Feb-16-18 10:00	
	<i>Analyzed:</i>	Feb-17-18 11:58	Feb-17-18 14:27	Feb-19-18 13:24	Feb-17-18 15:04	Feb-17-18 15:22	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	
m,p-Xylenes		<0.00401 0.00401	<0.00402 0.00402	<0.00398 0.00398	<0.00399 0.00399	<0.00401 0.00401	
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	
Inorganic Anions by EPA 300	<i>Extracted:</i>	Feb-21-18 12:00	Feb-21-18 12:00	Feb-21-18 12:00	Feb-21-18 12:00	Feb-21-18 12:00	
	<i>Analyzed:</i>	Feb-22-18 00:40	Feb-22-18 01:02	Feb-22-18 01:10	Feb-22-18 01:17	Feb-22-18 01:24	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		754 4.98	28.4 4.96	<4.89 4.89	<4.98 4.98	122 4.96	
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-18-18 14:00	Feb-18-18 14:00	Feb-18-18 14:00	Feb-18-18 14:00	Feb-18-18 14:00	
	<i>Analyzed:</i>	Feb-19-18 00:45	Feb-19-18 01:05	Feb-19-18 02:08	Feb-19-18 02:27	Feb-19-18 02:48	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	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	<15.0 15.0	<15.0 15.0	
Diesel Range Organics (DRO)		250 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	85.3 15.0	
Oil Range Hydrocarbons (ORO)		49.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	15.6 15.0	
Total TPH		299 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	101 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 - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer

Jessica Kramer
Odessa Laboratory Director



Certificate of Analytical Results 576507



LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS01** Matrix: Soil Date Received: 02.14.18 18.00
 Lab Sample Id: 576507-001 Date Collected: 02.12.18 15.00 Sample Depth: 12 In
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: LRI % Moisture:
 Analyst: AMB Date Prep: 02.21.18 12.00 Basis: Wet Weight
 Seq Number: 3041794

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	754	4.98	mg/kg	02.22.18 00.40		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 02.18.18 14.00 Basis: Wet Weight
 Seq Number: 3041598

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.19.18 00.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	250	15.0	mg/kg	02.19.18 00.45		1
Oil Range Hydrocarbons (ORO)	PHCG2835	49.0	15.0	mg/kg	02.19.18 00.45		1
Total TPH	PHC635	299	15.0	mg/kg	02.19.18 00.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	02.19.18 00.45	
o-Terphenyl	84-15-1	113	%	70-135	02.19.18 00.45	



Certificate of Analytical Results 576507



LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: SS01
Lab Sample Id: 576507-001

Matrix: Soil
Date Collected: 02.12.18 15.00

Date Received: 02.14.18 18.00
Sample Depth: 12 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.16.18 16.00

Basis: Wet Weight

Seq Number: 3041820

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.17.18 11.58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.17.18 11.58	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.17.18 11.58	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.17.18 11.58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.17.18 11.58	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.17.18 11.58	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.17.18 11.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	80-120	02.17.18 11.58		
1,4-Difluorobenzene	540-36-3	86	%	80-120	02.17.18 11.58		



Certificate of Analytical Results 576507



LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: SS02
Lab Sample Id: 576507-002

Matrix: Soil
Date Collected: 02.12.18 15.05

Date Received: 02.14.18 18.00
Sample Depth: 12 In

Analytical Method: Inorganic Anions by EPA 300

Tech: LRI

Analyst: AMB

Seq Number: 3041794

Date Prep: 02.21.18 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	28.4	4.96	mg/kg	02.22.18 01.02		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3041598

Date Prep: 02.18.18 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.19.18 01.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.19.18 01.05	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.19.18 01.05	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.19.18 01.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	02.19.18 01.05	
o-Terphenyl	84-15-1	102	%	70-135	02.19.18 01.05	



Certificate of Analytical Results 576507



LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: SS02
Lab Sample Id: 576507-002

Matrix: Soil
Date Collected: 02.12.18 15.05

Date Received: 02.14.18 18.00
Sample Depth: 12 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.16.18 10.00

Basis: Wet Weight

Seq Number: 3041711

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.17.18 14.27	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.17.18 14.27	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.17.18 14.27	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.17.18 14.27	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.17.18 14.27	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.17.18 14.27	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.17.18 14.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	80-120	02.17.18 14.27		
1,4-Difluorobenzene	540-36-3	81	%	80-120	02.17.18 14.27		



Certificate of Analytical Results 576507



LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS03**
 Lab Sample Id: 576507-003

Matrix: Soil
 Date Collected: 02.12.18 15.10

Date Received: 02.14.18 18.00
 Sample Depth: 12 In

Analytical Method: Inorganic Anions by EPA 300

Tech: LRI

Analyst: AMB

Seq Number: 3041794

Date Prep: 02.21.18 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.89	4.89	mg/kg	02.22.18 01.10	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3041598

Date Prep: 02.18.18 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.19.18 02.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.19.18 02.08	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.19.18 02.08	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.19.18 02.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	02.19.18 02.08	
o-Terphenyl	84-15-1	103	%	70-135	02.19.18 02.08	



Certificate of Analytical Results 576507



LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: SS03
Lab Sample Id: 576507-003

Matrix: Soil
Date Collected: 02.12.18 15.10

Date Received: 02.14.18 18.00
Sample Depth: 12 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.19.18 09.30

Basis: Wet Weight

Seq Number: 3041581

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.19.18 13.24	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.19.18 13.24	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.19.18 13.24	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.19.18 13.24	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.19.18 13.24	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.19.18 13.24	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.19.18 13.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	82	%	80-120	02.19.18 13.24		
4-Bromofluorobenzene	460-00-4	111	%	80-120	02.19.18 13.24		



Certificate of Analytical Results 576507



LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS04**
 Lab Sample Id: 576507-004

Matrix: Soil
 Date Collected: 02.12.18 15.15

Date Received: 02.14.18 18.00
 Sample Depth: 12 In

Analytical Method: Inorganic Anions by EPA 300

Tech: LRI

Analyst: AMB

Seq Number: 3041794

Date Prep: 02.21.18 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	02.22.18 01.17	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3041598

Date Prep: 02.18.18 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.19.18 02.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.19.18 02.27	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.19.18 02.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.19.18 02.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	02.19.18 02.27	
o-Terphenyl	84-15-1	103	%	70-135	02.19.18 02.27	



Certificate of Analytical Results 576507



LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS04**
 Lab Sample Id: 576507-004

Matrix: Soil
 Date Collected: 02.12.18 15.15

Date Received: 02.14.18 18.00
 Sample Depth: 12 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.16.18 10.00

Basis: Wet Weight

Seq Number: 3041711

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.17.18 15.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.17.18 15.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.17.18 15.04	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.17.18 15.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.17.18 15.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.17.18 15.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.17.18 15.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	80-120	02.17.18 15.04		
1,4-Difluorobenzene	540-36-3	86	%	80-120	02.17.18 15.04		



Certificate of Analytical Results 576507



LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS05** Matrix: Soil Date Received: 02.14.18 18.00
 Lab Sample Id: 576507-005 Date Collected: 02.12.18 15.20 Sample Depth: 12 In
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: LRI % Moisture:
 Analyst: AMB Date Prep: 02.21.18 12.00 Basis: Wet Weight
 Seq Number: 3041794

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	122	4.96	mg/kg	02.22.18 01.24		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 02.18.18 14.00 Basis: Wet Weight
 Seq Number: 3041598

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.19.18 02.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	85.3	15.0	mg/kg	02.19.18 02.48		1
Oil Range Hydrocarbons (ORO)	PHCG2835	15.6	15.0	mg/kg	02.19.18 02.48		1
Total TPH	PHC635	101	15.0	mg/kg	02.19.18 02.48		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	02.19.18 02.48	
o-Terphenyl	84-15-1	111	%	70-135	02.19.18 02.48	



Certificate of Analytical Results 576507



LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS05**
Lab Sample Id: 576507-005

Matrix: Soil
Date Collected: 02.12.18 15.20

Date Received: 02.14.18 18.00
Sample Depth: 12 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.16.18 10.00

Basis: Wet Weight

Seq Number: 3041711

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.17.18 15.22	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.17.18 15.22	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.17.18 15.22	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.17.18 15.22	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.17.18 15.22	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.17.18 15.22	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.17.18 15.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	80-120	02.17.18 15.22		
1,4-Difluorobenzene	540-36-3	82	%	80-120	02.17.18 15.22		



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **SQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(432) 563-1800	(432) 563-1713
(602) 437-0330	



LT Environmental, Inc.

PLU 150

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3041794

MB Sample Id: 7639565-1-BLK

Matrix: Solid

LCS Sample Id: 7639565-1-BKS

Prep Method: E300P

Date Prep: 02.21.18

LCSD Sample Id: 7639565-1-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	249	100	250	100	90-110	0	20	mg/kg	02.21.18 22:13	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3041794

Parent Sample Id: 576504-001

Matrix: Soil

MS Sample Id: 576504-001 S

Prep Method: E300P

Date Prep: 02.21.18

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Chloride	401	248	609	84	90-110	mg/kg	02.21.18 22:35	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3041794

Parent Sample Id: 576506-001

Matrix: Soil

MS Sample Id: 576506-001 S

Prep Method: E300P

Date Prep: 02.21.18

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Chloride	2150	1250	3260	89	90-110	mg/kg	02.22.18 00:11	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3041598

MB Sample Id: 7639461-1-BLK

Matrix: Solid

LCS Sample Id: 7639461-1-BKS

Prep Method: TX1005P

Date Prep: 02.18.18

LCSD Sample Id: 7639461-1-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)	<15.0	1000	1020	102	1010	101	70-135	1	35	mg/kg	02.19.18 00:05	
Diesel Range Organics (DRO)	<15.0	1000	893	89	866	87	70-135	3	35	mg/kg	02.19.18 00:05	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		101		103		70-135	%	02.19.18 00:05
o-Terphenyl	105		103		99		70-135	%	02.19.18 00:05

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

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

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



LT Environmental, Inc.

PLU 150

Analytical Method: TPH by SW8015 Mod

Seq Number: 3041598

Parent Sample Id: 576507-002

Matrix: Soil

MS Sample Id: 576507-002 S

Prep Method: TX1005P

Date Prep: 02.18.18

MSD Sample Id: 576507-002 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)	<15.0	997	1070	107	1130	113	70-135	5	35	mg/kg	02.19.18 01:27	
Diesel Range Organics (DRO)	<15.0	997	975	98	1080	108	70-135	10	35	mg/kg	02.19.18 01:27	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		118		70-135	%	02.19.18 01:27
o-Terphenyl	114		117		70-135	%	02.19.18 01:27

Analytical Method: BTEX by EPA 8021B

Seq Number: 3041711

MB Sample Id: 7639451-1-BLK

Matrix: Solid

LCS Sample Id: 7639451-1-BKS

Prep Method: SW5030B

Date Prep: 02.16.18

LCSD Sample Id: 7639451-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0884	88	0.0915	92	70-130	3	35	mg/kg	02.17.18 12:35	
Toluene	<0.00202	0.101	0.0901	89	0.0914	91	70-130	1	35	mg/kg	02.17.18 12:35	
Ethylbenzene	<0.00202	0.101	0.0939	93	0.0952	95	71-129	1	35	mg/kg	02.17.18 12:35	
m,p-Xylenes	<0.00403	0.202	0.183	91	0.186	93	70-135	2	35	mg/kg	02.17.18 12:35	
o-Xylene	<0.00202	0.101	0.0928	92	0.0943	94	71-133	2	35	mg/kg	02.17.18 12:35	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	85		92		92		80-120	%	02.17.18 12:35
4-Bromofluorobenzene	100		112		113		80-120	%	02.17.18 12:35

Analytical Method: BTEX by EPA 8021B

Seq Number: 3041820

MB Sample Id: 7639388-1-BLK

Matrix: Solid

LCS Sample Id: 7639388-1-BKS

Prep Method: SW5030B

Date Prep: 02.16.18

LCSD Sample Id: 7639388-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0861	85	0.0895	89	70-130	4	35	mg/kg	02.17.18 01:54	
Toluene	<0.00202	0.101	0.0866	86	0.0857	85	70-130	1	35	mg/kg	02.17.18 01:54	
Ethylbenzene	<0.00202	0.101	0.0896	89	0.0886	88	71-129	1	35	mg/kg	02.17.18 01:54	
m,p-Xylenes	<0.00403	0.202	0.174	86	0.173	86	70-135	1	35	mg/kg	02.17.18 01:54	
o-Xylene	<0.00202	0.101	0.0893	88	0.0891	88	71-133	0	35	mg/kg	02.17.18 01:54	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	83		90		91		80-120	%	02.17.18 01:54
4-Bromofluorobenzene	110		114		114		80-120	%	02.17.18 01:54

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

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

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



LT Environmental, Inc.

PLU 150

Analytical Method: BTEX by EPA 8021B

Seq Number: 3041581

MB Sample Id: 7639452-1-BLK

Matrix: Solid

LCS Sample Id: 7639452-1-BKS

Prep Method: SW5030B

Date Prep: 02.19.18

LCSD Sample Id: 7639452-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0907	91	0.0908	91	70-130	0	35	mg/kg	02.19.18 08:55	
Toluene	<0.00199	0.0994	0.0960	97	0.0966	97	70-130	1	35	mg/kg	02.19.18 08:55	
Ethylbenzene	<0.00199	0.0994	0.107	108	0.109	109	71-129	2	35	mg/kg	02.19.18 08:55	
m,p-Xylenes	<0.00398	0.199	0.211	106	0.217	109	70-135	3	35	mg/kg	02.19.18 08:55	
o-Xylene	<0.00199	0.0994	0.103	104	0.106	106	71-133	3	35	mg/kg	02.19.18 08:55	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	82		83		89		80-120	%	02.19.18 08:55
4-Bromofluorobenzene	99		113		116		80-120	%	02.19.18 08:55

Analytical Method: BTEX by EPA 8021B

Seq Number: 3041711

Parent Sample Id: 576509-003

Matrix: Soil

MS Sample Id: 576509-003 S

Prep Method: SW5030B

Date Prep: 02.16.18

MSD Sample Id: 576509-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0772	78	0.0848	85	70-130	9	35	mg/kg	02.17.18 13:12	
Toluene	<0.00199	0.0996	0.0737	74	0.0836	84	70-130	13	35	mg/kg	02.17.18 13:12	
Ethylbenzene	<0.00199	0.0996	0.0748	75	0.0848	85	71-129	13	35	mg/kg	02.17.18 13:12	
m,p-Xylenes	<0.00398	0.199	0.146	73	0.166	83	70-135	13	35	mg/kg	02.17.18 13:12	
o-Xylene	<0.00199	0.0996	0.0737	74	0.0837	84	71-133	13	35	mg/kg	02.17.18 13:12	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	84		85		80-120	%	02.17.18 13:12
4-Bromofluorobenzene	106		116		80-120	%	02.17.18 13:12

Analytical Method: BTEX by EPA 8021B

Seq Number: 3041820

Parent Sample Id: 576502-002

Matrix: Soil

MS Sample Id: 576502-002 S

Prep Method: SW5030B

Date Prep: 02.16.18

MSD Sample Id: 576502-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0799	80	0.0780	79	70-130	2	35	mg/kg	02.17.18 02:31	
Toluene	<0.00199	0.0996	0.0804	81	0.0774	78	70-130	4	35	mg/kg	02.17.18 02:31	
Ethylbenzene	<0.00199	0.0996	0.0806	81	0.0781	79	71-129	3	35	mg/kg	02.17.18 02:31	
m,p-Xylenes	<0.00398	0.199	0.156	78	0.151	76	70-135	3	35	mg/kg	02.17.18 02:31	
o-Xylene	<0.00199	0.0996	0.0800	80	0.0772	78	71-133	4	35	mg/kg	02.17.18 02:31	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	81		82		80-120	%	02.17.18 02:31
4-Bromofluorobenzene	120		115		80-120	%	02.17.18 02:31

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

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

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



LT Environmental, Inc.

PLU 150

Analytical Method: BTEX by EPA 8021B

Seq Number: 3041581

Parent Sample Id: 576793-001

Matrix: Soil

MS Sample Id: 576793-001 S

Prep Method: SW5030B

Date Prep: 02.19.18

MSD Sample Id: 576793-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0817	82	0.0725	73	70-130	12	35	mg/kg	02.19.18 09:34	
Toluene	<0.00199	0.0996	0.0873	88	0.0776	78	70-130	12	35	mg/kg	02.19.18 09:34	
Ethylbenzene	<0.00199	0.0996	0.0959	96	0.0888	89	71-129	8	35	mg/kg	02.19.18 09:34	
m,p-Xylenes	<0.00398	0.199	0.189	95	0.175	88	70-135	8	35	mg/kg	02.19.18 09:34	
o-Xylene	<0.00199	0.0996	0.0917	92	0.0875	88	71-133	5	35	mg/kg	02.19.18 09:34	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	84		80		80-120	%	02.19.18 09:34
4-Bromofluorobenzene	111		119		80-120	%	02.19.18 09:34

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

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$

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

Client / Reporting Information			Project Information			Analytical Information			Matrix Codes												
Company Name / Branch: LTE / Permian			Project Name/Number: PLU 150																		
Company Address: 3300 N. A Street Bldg 1 Suite 103 Midland TX 79705			Project Location:																		
Email: Abaker@ltenv.com			Phone No: 432-704-5178			Invoice To: NM															
Project Contact: Adrian Baker			XTO Energy - Kyle Littlell																		
Samplers Name: ADRIAN BAKER			PO Number: 30-015-31538																		
No.	Field ID / Point of Collection	Collection	Number of preserved bottles				Btex EPA Method 8021														
		Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	BTEX EPA Method 8015	Chloride EPA Method 300.1					
1	SS01	12"	2-12-18	15:00	S	1									X	X	X				
2	SS02			15:05											X	X	X				
3	SS03			15:10											X	X	X				
4	SS04			15:15											X	X	X				
5	SS05			15:20											X	X	X				
6																					
7																					
8																					
9																					
10																					
Turnaround Time (Business days)						Data Deliverable Information															
<input type="checkbox"/> Same Day TAT			<input type="checkbox"/> 5 Day TAT			<input checked="" type="checkbox"/> Level II Std QC			<input type="checkbox"/> Level IV (Full Data Pkg/raw data)						Notes:						
<input type="checkbox"/> Next Day EMERGENCY			<input type="checkbox"/> 7 Day TAT			<input type="checkbox"/> Level III Std QC+ Forms			<input type="checkbox"/> TRRP Level IV						Sampler Danny Burns						
<input type="checkbox"/> 2 Day EMERGENCY			<input type="checkbox"/> Contract TAT			<input type="checkbox"/> Level 3 (CLP Forms)			<input type="checkbox"/> UST / RG -411						API: 30-015-31538						
<input type="checkbox"/> 3 Day EMERGENCY			<input checked="" type="checkbox"/> STANDARD TAT			<input type="checkbox"/> TRRP Checklist									2 RP-3197						
TAT Starts Day received by Lab, if received by 5:00 pm																					
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																					
Relinquished by Sampler:			Date Time:			Received By:			Relinquished By:			Date Time:			Received By:						
1			2-14-18			1			2			2-14-18			2						
Relinquished by:			Date Time:			Received By:			Relinquished By:			Date Time:			Received By:						
3						3			4			4			4						
Relinquished by:			Date Time:			Received By:			Custody Seal #			Preserved where applicable			On Ice			Cooler Temp. Thermo. Corr. Factor			
5						5															
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the costs of samples and shall not be responsible for any other damages or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to all samples.																					



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 02/14/2018 06:00:00 PM

Work Order #: 576507

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)?	3.7
#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)?	No
#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:

Connie Hernandez

Date: 02/15/2018

Checklist reviewed by:

Jessica Kramer

Date: 02/15/2018

Analytical Report 639802

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU 150

012918050

18-OCT-19

Collected By: Client



1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

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

Xenco-Tampa: Florida (E87429), North Carolina (483)



18-OCT-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **639802**

PLU 150

Project Address:

Dan Moir:

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) 639802. 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. 639802 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,

A handwritten signature in black ink that reads 'Jessica Kramer'.

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 639802****LT Environmental, Inc., Arvada, CO**

PLU 150

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01A	S	10-11-19 10:53	2 ft	639802-001
SS02A	S	10-11-19 11:55	2 ft	639802-002
SS03A	S	10-11-19 11:36	2 ft	639802-003
SS04A	S	10-11-19 11:12	2 ft	639802-004
SS05A	S	10-11-19 10:37	2 ft	639802-005
SS06	S	10-11-19 12:07	0.5 ft	639802-006
SS06A	S	10-11-19 12:17	2 ft	639802-007

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: PLU 150**Project ID: 012918050
Work Order Number(s): 639802Report Date: 18-OCT-19
Date Received: 10/11/2019**Sample receipt non conformances and comments:**

PER CLIENTS EMAIL, CORRECTED SAMPLE NAMES. SEE BELOW. JK 10/18/19 NEW VERSION GENERATED

SS01--> SS01A

SS02 --> SS02A

SS03 --> SS03A

SS04 --> SS04A

SS05 --> SS05A

SS06A --> SS06

SS06B--> SS06A

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3104255 Chloride by EPA 300

Lab Sample ID 639802-006 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 639802-005, -006, -007.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3104315 BTEX by EPA 8021B

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

Batch: LBA-3104433 BTEX by EPA 8021B

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

Certificate of Analysis Summary 639802



LT Environmental, Inc., Arvada, CO

Project Name: PLU 150

Project Id: 012918050

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Oct-11-19 04:11 pm

Report Date: 18-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	639802-001	639802-002	639802-003	639802-004	639802-005	639802-006
	<i>Field Id:</i>	SS01A	SS02A	SS03A	SS04A	SS05A	SS06
	<i>Depth:</i>	2- ft	2- ft	2- ft	2- ft	2- ft	0.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-11-19 10:53	Oct-11-19 11:55	Oct-11-19 11:36	Oct-11-19 11:12	Oct-11-19 10:37	Oct-11-19 12:07
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-14-19 16:10	Oct-14-19 16:10	Oct-14-19 16:10	Oct-14-19 16:10	Oct-14-19 16:10	Oct-14-19 16:10
	<i>Analyzed:</i>	Oct-14-19 23:37	Oct-14-19 23:56	Oct-15-19 03:02	Oct-15-19 03:21	Oct-15-19 03:40	Oct-15-19 03:59
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100
Toluene		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100
Ethylbenzene		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100
m,p-Xylenes		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201
o-Xylene		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100
Total Xylenes		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100
Total BTEX		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100
Chloride by EPA 300	<i>Extracted:</i>	Oct-14-19 12:00	Oct-14-19 12:00	Oct-14-19 12:00	Oct-14-19 12:00	Oct-14-19 18:10	Oct-14-19 18:10
	<i>Analyzed:</i>	Oct-14-19 17:42	Oct-14-19 17:49	Oct-14-19 17:57	Oct-14-19 18:04	Oct-14-19 19:39	Oct-14-19 19:14
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		270 9.96	<9.96 9.96	<9.92 9.92	<9.98 9.98	18.8 11.4	21.4 10.1
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-15-19 15:30	Oct-15-19 15:30	Oct-15-19 15:30	Oct-15-19 15:30	Oct-14-19 12:10	Oct-14-19 12:10
	<i>Analyzed:</i>	Oct-15-19 22:21	Oct-15-19 22:41	Oct-15-19 23:01	Oct-15-19 23:21	Oct-14-19 21:30	Oct-14-19 22:30
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<49.8 49.8	<50.2 50.2	<50.2 50.2	<50.0 50.0	<50.1 50.1
Diesel Range Organics (DRO)		<50.2 50.2	<49.8 49.8	<50.2 50.2	<50.2 50.2	<50.0 50.0	<50.1 50.1
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<49.8 49.8	<50.2 50.2	<50.2 50.2	<50.0 50.0	<50.1 50.1
Total GRO-DRO		<50.2 50.2	<49.8 49.8	<50.2 50.2	<50.2 50.2	<50.0 50.0	<50.1 50.1
Total TPH		<50.2 50.2	<49.8 49.8	<50.2 50.2	<50.2 50.2	<50.0 50.0	<50.1 50.1

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.

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Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 639802

LT Environmental, Inc., Arvada, CO

Project Name: PLU 150

Project Id: 012918050

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Oct-11-19 04:11 pm

Report Date: 18-OCT-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	639802-007					
	Field Id:	SS06A					
	Depth:	2- ft					
	Matrix:	SOIL					
	Sampled:	Oct-11-19 12:17					
BTEX by EPA 8021B	Extracted:	Oct-14-19 16:10					
	Analyzed:	Oct-15-19 04:19					
	Units/RL:	mg/kg RL					
Benzene		<0.00100 0.00100					
Toluene		<0.00100 0.00100					
Ethylbenzene		<0.00100 0.00100					
m,p-Xylenes		<0.00201 0.00201					
o-Xylene		<0.00100 0.00100					
Total Xylenes		<0.00100 0.00100					
Total BTEX		<0.00100 0.00100					
Chloride by EPA 300	Extracted:	Oct-14-19 18:10					
	Analyzed:	Oct-14-19 19:33					
	Units/RL:	mg/kg RL					
Chloride		<10.1 10.1					
TPH by SW8015 Mod	Extracted:	Oct-14-19 12:10					
	Analyzed:	Oct-14-19 22:50					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0					
Diesel Range Organics (DRO)		86.0 50.0					
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0					
Total GRO-DRO		86.0 50.0					
Total TPH		86.0 50.0					

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.

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Version: 1.0%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 639802

LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS01A** Matrix: Soil Date Received: 10.11.19 16.11
 Lab Sample Id: 639802-001 Date Collected: 10.11.19 10.53 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 10.14.19 12.00 Basis: Wet Weight
 Seq Number: 3104254

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	270	9.96	mg/kg	10.14.19 17.42		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 10.15.19 15.30 Basis: Wet Weight
 Seq Number: 3104456

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.15.19 22.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.15.19 22.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.15.19 22.21	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.15.19 22.21	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.15.19 22.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.15.19 22.21	
o-Terphenyl	84-15-1	86	%	70-135	10.15.19 22.21	



Certificate of Analytical Results 639802

LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS01A**
Lab Sample Id: 639802-001

Matrix: Soil
Date Collected: 10.11.19 10.53

Date Received: 10.11.19 16.11
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.14.19 16.10

Basis: Wet Weight

Seq Number: 3104315

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	10.14.19 23.37	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	10.14.19 23.37	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	10.14.19 23.37	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	10.14.19 23.37	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	10.14.19 23.37	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	10.14.19 23.37	U	1
Total BTEX		<0.000994	0.000994	mg/kg	10.14.19 23.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	10.14.19 23.37		
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.14.19 23.37		



Certificate of Analytical Results 639802

LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS02A**
 Lab Sample Id: 639802-002

Matrix: Soil
 Date Collected: 10.11.19 11.55

Date Received: 10.11.19 16.11
 Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.14.19 12.00

Basis: Wet Weight

Seq Number: 3104254

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.96	9.96	mg/kg	10.14.19 17.49	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 10.15.19 15.30

Basis: Wet Weight

Seq Number: 3104456

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.15.19 22.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.15.19 22.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.15.19 22.41	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.15.19 22.41	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.15.19 22.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	10.15.19 22.41	
o-Terphenyl	84-15-1	113	%	70-135	10.15.19 22.41	



Certificate of Analytical Results 639802

LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS02A**
 Lab Sample Id: 639802-002

Matrix: Soil
 Date Collected: 10.11.19 11.55

Date Received: 10.11.19 16.11
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.14.19 16.10

Basis: Wet Weight

Seq Number: 3104315

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.14.19 23.56	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.14.19 23.56	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.14.19 23.56	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	10.14.19 23.56	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.14.19 23.56	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.14.19 23.56	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.14.19 23.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	116	%	70-130	10.14.19 23.56		
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.14.19 23.56		



Certificate of Analytical Results 639802

LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS03A**
 Lab Sample Id: 639802-003

Matrix: Soil
 Date Collected: 10.11.19 11.36

Date Received: 10.11.19 16.11
 Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.14.19 12.00

Basis: Wet Weight

Seq Number: 3104254

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.92	9.92	mg/kg	10.14.19 17.57	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 10.15.19 15.30

Basis: Wet Weight

Seq Number: 3104456

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.15.19 23.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.15.19 23.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.15.19 23.01	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.15.19 23.01	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.15.19 23.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	10.15.19 23.01	
o-Terphenyl	84-15-1	84	%	70-135	10.15.19 23.01	



Certificate of Analytical Results 639802

LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS03A**
 Lab Sample Id: 639802-003

Matrix: Soil
 Date Collected: 10.11.19 11.36

Date Received: 10.11.19 16.11
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.14.19 16.10

Basis: Wet Weight

Seq Number: 3104433

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.15.19 03.02	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.15.19 03.02	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.15.19 03.02	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	10.15.19 03.02	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.15.19 03.02	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.15.19 03.02	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.15.19 03.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	129	%	70-130	10.15.19 03.02		
1,4-Difluorobenzene	540-36-3	106	%	70-130	10.15.19 03.02		



Certificate of Analytical Results 639802

LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS04A**
 Lab Sample Id: 639802-004

Matrix: Soil
 Date Collected: 10.11.19 11.12

Date Received: 10.11.19 16.11
 Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.14.19 12.00

Basis: Wet Weight

Seq Number: 3104254

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	10.14.19 18.04	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 10.15.19 15.30

Basis: Wet Weight

Seq Number: 3104456

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.15.19 23.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.15.19 23.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.15.19 23.21	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.15.19 23.21	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.15.19 23.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	10.15.19 23.21	
o-Terphenyl	84-15-1	84	%	70-135	10.15.19 23.21	



Certificate of Analytical Results 639802

LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS04A**
 Lab Sample Id: 639802-004

Matrix: Soil
 Date Collected: 10.11.19 11.12

Date Received: 10.11.19 16.11
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.14.19 16.10

Basis: Wet Weight

Seq Number: 3104433

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	10.15.19 03.21	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	10.15.19 03.21	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	10.15.19 03.21	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	10.15.19 03.21	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	10.15.19 03.21	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	10.15.19 03.21	U	1
Total BTEX		<0.00101	0.00101	mg/kg	10.15.19 03.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	126	%	70-130	10.15.19 03.21		
1,4-Difluorobenzene	540-36-3	107	%	70-130	10.15.19 03.21		



Certificate of Analytical Results 639802

LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS05A**
Lab Sample Id: 639802-005

Matrix: Soil
Date Collected: 10.11.19 10.37

Date Received: 10.11.19 16.11
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3104255

Date Prep: 10.14.19 18.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18.8	11.4	mg/kg	10.14.19 19.39		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3104322

Date Prep: 10.14.19 12.10

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.14.19 21.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.14.19 21.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.14.19 21.30	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.14.19 21.30	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.14.19 21.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-135	10.14.19 21.30	
o-Terphenyl	84-15-1	76	%	70-135	10.14.19 21.30	



Certificate of Analytical Results 639802

LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS05A**
Lab Sample Id: 639802-005

Matrix: Soil
Date Collected: 10.11.19 10.37

Date Received: 10.11.19 16.11
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.14.19 16.10

Basis: Wet Weight

Seq Number: 3104433

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	10.15.19 03.40	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	10.15.19 03.40	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	10.15.19 03.40	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	10.15.19 03.40	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	10.15.19 03.40	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	10.15.19 03.40	U	1
Total BTEX		<0.00101	0.00101	mg/kg	10.15.19 03.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	10.15.19 03.40		
4-Bromofluorobenzene	460-00-4	126	%	70-130	10.15.19 03.40		



Certificate of Analytical Results 639802

LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS06**
Lab Sample Id: 639802-006

Matrix: Soil
Date Collected: 10.11.19 12.07

Date Received: 10.11.19 16.11
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3104255

Date Prep: 10.14.19 18.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	21.4	10.1	mg/kg	10.14.19 19.14		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3104322

Date Prep: 10.14.19 12.10

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.14.19 22.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.14.19 22.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.14.19 22.30	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.14.19 22.30	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.14.19 22.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	10.14.19 22.30	
o-Terphenyl	84-15-1	79	%	70-135	10.14.19 22.30	



Certificate of Analytical Results 639802

LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS06**
Lab Sample Id: 639802-006

Matrix: Soil
Date Collected: 10.11.19 12.07

Date Received: 10.11.19 16.11
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.14.19 16.10

Basis: Wet Weight

Seq Number: 3104433

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.15.19 03.59	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.15.19 03.59	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.15.19 03.59	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	10.15.19 03.59	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.15.19 03.59	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.15.19 03.59	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.15.19 03.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	125	%	70-130	10.15.19 03.59		
1,4-Difluorobenzene	540-36-3	105	%	70-130	10.15.19 03.59		



Certificate of Analytical Results 639802

LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS06A**
 Lab Sample Id: 639802-007

Matrix: Soil
 Date Collected: 10.11.19 12.17

Date Received: 10.11.19 16.11
 Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.14.19 18.10

Basis: Wet Weight

Seq Number: 3104255

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.1	10.1	mg/kg	10.14.19 19.33	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 10.14.19 12.10

Basis: Wet Weight

Seq Number: 3104322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.14.19 22.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	86.0	50.0	mg/kg	10.14.19 22.50		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.14.19 22.50	U	1
Total GRO-DRO	PHC628	86.0	50.0	mg/kg	10.14.19 22.50		1
Total TPH	PHC635	86.0	50.0	mg/kg	10.14.19 22.50		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	10.14.19 22.50	
o-Terphenyl	84-15-1	81	%	70-135	10.14.19 22.50	



Certificate of Analytical Results 639802

LT Environmental, Inc., Arvada, CO

PLU 150

Sample Id: **SS06A**
Lab Sample Id: 639802-007

Matrix: Soil
Date Collected: 10.11.19 12.17

Date Received: 10.11.19 16.11
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3104433

Prep Method: SW5030B

% Moisture:

Date Prep: 10.14.19 16.10

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.15.19 04.19	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.15.19 04.19	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.15.19 04.19	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	10.15.19 04.19	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.15.19 04.19	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.15.19 04.19	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.15.19 04.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	10.15.19 04.19		
4-Bromofluorobenzene	460-00-4	126	%	70-130	10.15.19 04.19		



Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



LT Environmental, Inc.

PLU 150

Analytical Method: Chloride by EPA 300

Seq Number: 3104254

MB Sample Id: 7688096-1-BLK

Matrix: Solid

LCS Sample Id: 7688096-1-BKS

Prep Method: E300P

Date Prep: 10.14.19

LCSD Sample Id: 7688096-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3.19	300	299	100	302	101	90-110	1	20	mg/kg	10.14.19 14:32	

Analytical Method: Chloride by EPA 300

Seq Number: 3104255

MB Sample Id: 7688098-1-BLK

Matrix: Solid

LCS Sample Id: 7688098-1-BKS

Prep Method: E300P

Date Prep: 10.14.19

LCSD Sample Id: 7688098-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	300	299	100	302	101	90-110	1	20	mg/kg	10.14.19 18:27	

Analytical Method: Chloride by EPA 300

Seq Number: 3104254

Parent Sample Id: 639781-001

Matrix: Soil

MS Sample Id: 639781-001 S

Prep Method: E300P

Date Prep: 10.14.19

MSD Sample Id: 639781-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	12.0	198	242	116	265	128	90-110	9	20	mg/kg	10.14.19 14:54	X

Analytical Method: Chloride by EPA 300

Seq Number: 3104254

Parent Sample Id: 639787-008

Matrix: Soil

MS Sample Id: 639787-008 S

Prep Method: E300P

Date Prep: 10.14.19

MSD Sample Id: 639787-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.51	199	239	117	242	119	90-110	1	20	mg/kg	10.14.19 16:41	X

Analytical Method: Chloride by EPA 300

Seq Number: 3104255

Parent Sample Id: 639802-006

Matrix: Soil

MS Sample Id: 639802-006 S

Prep Method: E300P

Date Prep: 10.14.19

MSD Sample Id: 639802-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	21.4	200	256	117	254	116	90-110	1	20	mg/kg	10.14.19 19:20	X

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



LT Environmental, Inc.

PLU 150

Analytical Method: TPH by SW8015 Mod

Seq Number: 3104322

MB Sample Id: 7688113-1-BLK

Matrix: Solid

LCS Sample Id: 7688113-1-BKS

Prep Method: SW8015P

Date Prep: 10.14.19

LCSD Sample Id: 7688113-1-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)	<50.0	1000	818	82	829	83	70-135	1	35	mg/kg	10.14.19 20:50	
Diesel Range Organics (DRO)	<50.0	1000	739	74	760	76	70-135	3	35	mg/kg	10.14.19 20:50	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	82		104		96		70-135	%	10.14.19 20:50
o-Terphenyl	85		93		94		70-135	%	10.14.19 20:50

Analytical Method: TPH by SW8015 Mod

Seq Number: 3104456

MB Sample Id: 7688185-1-BLK

Matrix: Solid

LCS Sample Id: 7688185-1-BKS

Prep Method: SW8015P

Date Prep: 10.15.19

LCSD Sample Id: 7688185-1-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)	<50.0	1000	1020	102	1040	104	70-135	2	35	mg/kg	10.15.19 19:02	
Diesel Range Organics (DRO)	<50.0	1000	862	86	874	87	70-135	1	35	mg/kg	10.15.19 19:02	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		112		128		70-135	%	10.15.19 19:02
o-Terphenyl	112		98		99		70-135	%	10.15.19 19:02

Analytical Method: TPH by SW8015 Mod

Seq Number: 3104322

Matrix: Solid

MB Sample Id: 7688113-1-BLK

Prep Method: SW8015P

Date Prep: 10.14.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.14.19 20:30	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3104456

Matrix: Solid

MB Sample Id: 7688185-1-BLK

Prep Method: SW8015P

Date Prep: 10.15.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.15.19 18:41	

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

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

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



LT Environmental, Inc.

PLU 150

Analytical Method: TPH by SW8015 Mod

Seq Number: 3104322

Parent Sample Id: 639802-005

Matrix: Soil

MS Sample Id: 639802-005 S

Prep Method: SW8015P

Date Prep: 10.14.19

MSD Sample Id: 639802-005 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)	<50.2	1000	934	93	897	90	70-135	4	35	mg/kg	10.14.19 21:50	
Diesel Range Organics (DRO)	<50.2	1000	828	83	813	81	70-135	2	35	mg/kg	10.14.19 21:50	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		100		70-135	%	10.14.19 21:50
o-Terphenyl	100		98		70-135	%	10.14.19 21:50

Analytical Method: TPH by SW8015 Mod

Seq Number: 3104456

Parent Sample Id: 639787-008

Matrix: Soil

MS Sample Id: 639787-008 S

Prep Method: SW8015P

Date Prep: 10.15.19

MSD Sample Id: 639787-008 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)	<50.1	1000	971	97	952	95	70-135	2	35	mg/kg	10.15.19 20:22	
Diesel Range Organics (DRO)	<50.1	1000	947	95	804	80	70-135	16	35	mg/kg	10.15.19 20:22	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		108		70-135	%	10.15.19 20:22
o-Terphenyl	122		96		70-135	%	10.15.19 20:22

Analytical Method: BTEX by EPA 8021B

Seq Number: 3104315

MB Sample Id: 7688133-1-BLK

Matrix: Solid

LCS Sample Id: 7688133-1-BKS

Prep Method: SW5030B

Date Prep: 10.14.19

LCSD Sample Id: 7688133-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0948	95	0.0980	98	70-130	3	35	mg/kg	10.14.19 18:26	
Toluene	<0.00100	0.100	0.0936	94	0.0968	97	70-130	3	35	mg/kg	10.14.19 18:26	
Ethylbenzene	<0.00100	0.100	0.0972	97	0.101	101	71-129	4	35	mg/kg	10.14.19 18:26	
m,p-Xylenes	<0.00200	0.200	0.197	99	0.202	101	70-135	3	35	mg/kg	10.14.19 18:26	
o-Xylene	<0.00100	0.100	0.0968	97	0.0992	99	71-133	2	35	mg/kg	10.14.19 18:26	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		100		101		70-130	%	10.14.19 18:26
4-Bromofluorobenzene	98		103		102		70-130	%	10.14.19 18:26

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



LT Environmental, Inc.

PLU 150

Analytical Method: BTEX by EPA 8021B

Seq Number: 3104433

MB Sample Id: 7688180-1-BLK

Matrix: Solid

LCS Sample Id: 7688180-1-BKS

Prep Method: SW5030B

Date Prep: 10.14.19

LCSD Sample Id: 7688180-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0972	97	0.0934	93	70-130	4	35	mg/kg	10.14.19 19:43	
Toluene	<0.00100	0.100	0.0942	94	0.0933	93	70-130	1	35	mg/kg	10.14.19 19:43	
Ethylbenzene	<0.00100	0.100	0.0940	94	0.0941	94	71-129	0	35	mg/kg	10.14.19 19:43	
m,p-Xylenes	<0.00200	0.200	0.199	100	0.199	100	70-135	0	35	mg/kg	10.14.19 19:43	
o-Xylene	<0.00100	0.100	0.0965	97	0.0968	97	71-133	0	35	mg/kg	10.14.19 19:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		103		100		70-130	%	10.14.19 19:43
4-Bromofluorobenzene	98		104		108		70-130	%	10.14.19 19:43

Analytical Method: BTEX by EPA 8021B

Seq Number: 3104315

Parent Sample Id: 639886-001

Matrix: Soil

MS Sample Id: 639886-001 S

Prep Method: SW5030B

Date Prep: 10.14.19

MSD Sample Id: 639886-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000994	0.0994	0.0965	97	0.0825	83	70-130	16	35	mg/kg	10.14.19 19:04	
Toluene	<0.000994	0.0994	0.0934	94	0.0792	80	70-130	16	35	mg/kg	10.14.19 19:04	
Ethylbenzene	<0.000994	0.0994	0.0955	96	0.0803	81	71-129	17	35	mg/kg	10.14.19 19:04	
m,p-Xylenes	<0.00199	0.199	0.192	96	0.161	81	70-135	18	35	mg/kg	10.14.19 19:04	
o-Xylene	<0.000994	0.0994	0.0969	97	0.0826	83	71-133	16	35	mg/kg	10.14.19 19:04	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		104		70-130	%	10.14.19 19:04
4-Bromofluorobenzene	111		110		70-130	%	10.14.19 19:04

Analytical Method: BTEX by EPA 8021B

Seq Number: 3104433

Parent Sample Id: 639785-001

Matrix: Soil

MS Sample Id: 639785-001 S

Prep Method: SW5030B

Date Prep: 10.14.19

MSD Sample Id: 639785-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0971	97	0.0863	86	70-130	12	35	mg/kg	10.14.19 20:21	
Toluene	<0.00100	0.100	0.0942	94	0.0835	84	70-130	12	35	mg/kg	10.14.19 20:21	
Ethylbenzene	<0.00100	0.100	0.0940	94	0.0820	82	71-129	14	35	mg/kg	10.14.19 20:21	
m,p-Xylenes	<0.00200	0.200	0.199	100	0.173	87	70-135	14	35	mg/kg	10.14.19 20:21	
o-Xylene	<0.00100	0.100	0.0996	100	0.0864	86	71-133	14	35	mg/kg	10.14.19 20:21	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		107		70-130	%	10.14.19 20:21
4-Bromofluorobenzene	120		119		70-130	%	10.14.19 20:21

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



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

Chain of Custody

Work Order No:

6639 802

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Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	lidelval@ltenv.com

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

Project Name:	PLU 150	Turn Around	<input checked="" type="checkbox"/> Routine
Project Number:	012918050	Rush:	
P.O. Number:		Due Date:	
Sampler's Name:	Benjamin Beitt	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	0.0	Thermometer ID				
Received Intact:	Yes	No	Correction Factor: -0.2			
Cooler Custody Seals:	Yes	No	N/A	Total Containers:	7	
Sample Custody Seals:	Yes	No	N/A			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 8015)	Chloride (EPA 8015)	Sample Comments										
SS01	S	10-11-19	1053	2'	1	X	X	X											
SS02			1155																
SS03			1136																
SS04			1112																
SS05			1037																
SS06A			1207	0.5'															
SS06B			1217	2'															

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to 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
		10/11/19 10:11			



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 10/11/2019 04:11:00 PM

Work Order #: 639802

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist**Comments**

#1 *Temperature of cooler(s)?	0
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#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)?	No
#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:

Elizabeth McClellan

Date: 10/11/2019

Checklist reviewed by:

Jessica Kramer

Date: 10/13/2019

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 8315

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 8315
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	The OCD requires continuous seeding of soils impacted by the release until uniform vegetative cover has been established that reflects a life-form ratio of plus or minus fifty percent of pre-disturbance levels and a total percent plant cover of at least seventy percent of pre-disturbance levels, excluding noxious weeds. Also please note that for any major or minor release containing liquids, the responsible party must notify the division when reclamation and re-vegetation are complete.	6/27/2022