



LT Environmental, Inc.

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

October 22, 2018

Mr. Mike Bratcher  
New Mexico Oil Conservation Division  
811 South First Street  
Artesia, New Mexico 88210

**RE: Closure Request  
Poker Lake Unit 213  
Remediation Permit Number 2RP-3130 and 2RP-4745  
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following letter report detailing the excavation of impacted soil and confirmation soil sampling activities at the Poker Lake Unit (PLU) 213 crude oil well (Site) in Unit P, Section 18, Township 24 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the excavation and soil sampling activities was to address impacts to soil after two separate events caused the release of produced water onto the well pad and surrounding pasture.

On July 13, 2015, a rubber gasket on the inside of a pipe clamp on the water transfer line from the production area to the tank battery failed, releasing approximately 13 barrels (bbls) of produced water. Approximately 4 bbls of produced water were recovered. The former operator reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on July 14, 2015 and was assigned Remediation Permit (RP) Number 2RP-3130 (Attachment 1).

On April 29, 2018, worn threads on a connection between a pipeline and pump caused approximately 10 bbls of produced water to release west across the lease road and onto an adjacent pasture. Free-standing liquid was recovered with a vacuum truck; approximately 2.5 bbls of produced water were recovered. XTO reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 on May 14, 2018 and was assigned RP Number 2RP-4745 (Attachment 1).

Although the July 2015 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. Since the two historical releases described above occurred at the same production facility, the sampling and excavation activities were completed to address and close both releases simultaneously. Based on the results of the confirmation soil sampling events, XTO is requesting no further action for these two release events.





Bratcher, M.  
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## BACKGROUND

Because both releases occurred prior to August 14, 2018, LTE applied the NMOCD 1993 *Guidelines for Leaks, Spills, and Releases* for determining remediation action levels. 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 and known aquifer properties. The nearest permitted water well is C 02109, located approximately 0.7 miles south of the release, with a depth to groundwater of 130 feet bgs and a total depth of 150 feet bgs. The Site is greater than 200 feet from a water source and greater than 1,000 feet from a private domestic water source. The closest surface water to the Site is a first order tributary of Dog Town Draw, located approximately 644 feet south of the Site. Based on these criteria, the NMOCD site ranking for remediation action levels is 10, and the following remediation action levels apply under the NMOCD 1993 *Guidelines for Leaks, Spills, and Releases*: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg benzene, toluene, ethylbenzene, and total xylenes (BTEX); and 1,000 mg/kg total petroleum hydrocarbons (TPH). Based on standard practice in this region, LTE applied a site-specific chloride action level of 600 mg/kg.

## SOIL SAMPLING

On February 5, 2018, and June 3, 2018, an LTE scientist collected twelve preliminary soil samples to assess the lateral extent of soil impact associated with the two releases described above. To eliminate the effects from weathering and natural degradation of contaminants at the ground surface, the soil samples were collected from each sample location at approximately 0.5 feet bgs. The soil sample locations were selected based on information provided on the initial Form C-141s and field observations.

Five soil samples (SS1 through SS5) were collected to assess the lateral extent of soil impact associated with release 2RP-3130 (Figure 2). Seven soil samples (SS1 through SS7) were collected to assess the lateral extent of soil impact associated with release 2RP-4745 (Figure 3).

The soil samples were screened for volatile aromatic hydrocarbons using a photo-ionization detector (PID) equipped with a 10.6 electron volt lamp in accordance with the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases*, August 13, 1993. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, and method of analysis, and immediately placed on ice. The samples were shipped at 4 degrees Celsius (°C) to Hall Environmental Analysis Laboratories in Albuquerque, New Mexico, or Xenco Laboratories in Midland, Texas, under strict chain-of-custody procedures for analysis of BTEX by United States Environmental Protection Agency (USEPA) Method 8021B, TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) by USEPA Method 8015 Modified, and chloride by USEPA Method 300.





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Laboratory analytical results for the preliminary soil samples associated with release 2RP-3130 indicated one soil sample (SS1) exceeded the NMOCD site-specific remediation action level for chloride. The analytical results are depicted on Figure 2 and summarized in Table 1. Laboratory analytical results for the preliminary soil samples associated with release 2RP-4745 indicated three soil samples (SS1, SS3 and SS5) exceeded the NMOCD site-specific remediation action level for chloride. The analytical results are depicted on Figure 3 and summarized in Table 2. The laboratory analytical reports are included in Attachment 2.

Based on the soil sample laboratory analytical results, excavating impacted soil was required in the impacted areas associated with releases 2RP-3130 and 2RP-4745.

### EXCAVATION ACTIVITIES

During August and September 2018, LTE personnel returned to the Site to oversee excavation of impacted soil as indicated by laboratory analytical results exceeding the NMOCD remediation action level for chloride in preliminary soil sample SS1 associated with release 2RP-3130 and preliminary soil samples SS1, SS3, and SS5 associated with release 2RP-4745. Excavation activities commenced on August 30, 2018 and concluded on September 20, 2018. To delineate chloride impacts to soil and direct excavation activities, LTE screened soil samples using a PID and Hach® chloride QuanTab® test strips.

Excavation activities associated with release 2RP-3130 were completed in the area around preliminary soil sample SS1. Upon completing excavation activities, LTE collected confirmation soil samples SS06 and SS07 from the excavation at a depth of 2 feet bgs. The excavation measured approximately 192 square feet with a depth of 2 feet bgs and is illustrated on Figure 2.

Excavation activities associated with release 2RP-4745 were completed in the areas around preliminary samples SS1, SS3, and SS5. Upon completing excavation activities around preliminary sample SS1, LTE collected confirmation soil sample SS16 from a depth of 1.5 feet bgs and SS14 from a depth of 2 feet bgs. Upon completing excavation activities around preliminary sample SS3, LTE collected confirmation soil sample SS15 from a depth of 1.5 feet bgs. Upon completing excavation activities around preliminary sample SS5, LTE collected confirmation soil sample SS08 from a depth of 2 feet bgs. The 2RP-4745 excavation measured approximately 3,675 square feet with a depth of 3.5 feet bgs in the west portion of the excavation and 2 feet bgs in the east portion of the excavation and is illustrated on Figure 3. While on site for excavation activities, LTE collected a total of thirteen confirmation soil samples (SS08 through SS19, and FS01) to confirm excavation had removed impacted soil. The confirmation soil samples were collected and handled as previously described and submitted to Xenco Laboratories in Midland, Texas.





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Approximately 354 cubic yards total of impacted soil were removed via backhoe, skid steer, and hydro-vacuum from the excavations. The impacted soil was transported and properly disposed of at the R360 Landfill in Hobbs, New Mexico.

## **ANALYTICAL RESULTS**

Laboratory analytical results confirmed that all soil samples collected from the final excavation extents were compliant with the NMOCD site-specific remediation action levels for BTEX, TPH, and chloride. Laboratory analytical results for the preliminary soil samples associated with release 2RP-3130 indicated soil sample SS1 exceeded the NMOCD remediation action level for chloride. The area around preliminary sample SS1 was excavated and subsequent soil samples SS06 and SS07 indicated the chloride concentrations were compliant with the NMOCD remediation action level. Laboratory analytical results for the preliminary soil samples associated with release 2RP-4745 indicated soil samples SS1, SS3, and SS5 exceeded the NMOCD remediation action level for chloride. The areas around preliminary soil samples SS1, SS3, and SS5 were excavated and subsequent soil samples SS08, SS14, SS15, and SS16 indicated the chloride concentrations were compliant with the NMOCD remediation action level.

Additionally, laboratory analytical results indicated that all final confirmation surface soil samples were compliant with the NMOCD site-specific remediation action levels for BTEX, TPH, and chloride and successfully defined the extent of soil impacts associated with the two releases. Laboratory analytical results are presented on Figures 2 and 3 and summarized in Tables 1 and 2, a photographic log is included in Attachment 2, and the complete laboratory analytical reports are included as Attachment 3.

## **CONCLUSIONS**

Laboratory analytical results for the final confirmation surface soil samples and final excavation soil samples indicate that BTEX, TPH, and chloride concentrations are compliant with NMOCD site-specific remediation action levels. Initial response efforts, natural degradation, and excavation of impacted soil have mitigated impacts at this Site. XTO requests no further action for release numbers 2RP-3130 and 2RP-4745. Upon approval of this request, XTO will backfill the well pad excavations with caliche well pad material and backfill the pasture excavation with material purchased locally and will recontour the Site to match pre-existing topography. XTO will re-seed the pasture area with Bureau of Land Management seed mix #2 via drill or broadcast method. An updated NMOCD Form C-141 for each release is included in Attachment 1.

If you have any questions or comments, please do not hesitate to contact Ms. Adrian Baker at (432) 887-1255 or [abaker@ltenv.com](mailto:abaker@ltenv.com).

Sincerely,





Bratcher, M.  
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LT ENVIRONMENTAL, INC.

A handwritten signature in blue ink that reads 'Adrian Baker'.

Adrian Baker  
Project Geologist

A handwritten signature in blue ink that reads 'Ashley L. Ager'.

Ashley L. Ager, P.G.  
Senior Geologist

cc: Kyle Littrell, XTO  
Maria Pruett, NMOCD  
Jim Amos, BLM  
Shelly Tucker, BLM

Attachments:

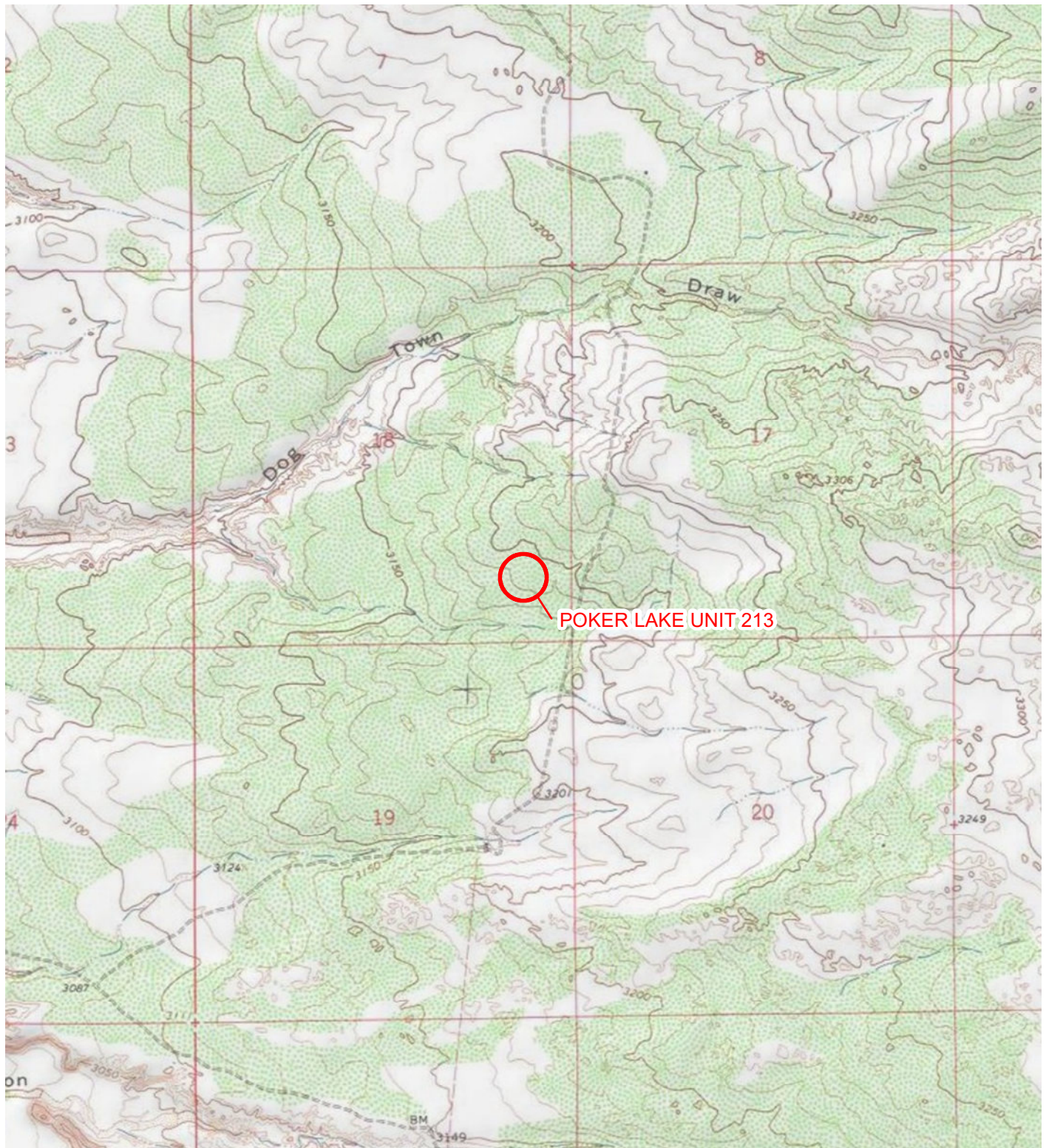
Figure 1 Site Location Map  
Figure 2 Soil Sample Locations (2RP-3130)  
Figure 3 Soil Sample Locations (2RP-4745)  
Table 1 Soil Analytical Results (2RP-3130)  
Table 2 Soil Analytical Results (2RP-4745)  
Attachment 1 Initial/Final NMOCD Form C-141 (2RP-3130 and 2RP-4745)  
Attachment 2 Photographic Log  
Attachment 3 Laboratory Analytical Reports



FIGURES

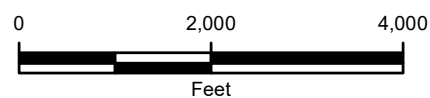




**LEGEND**

 SITE LOCATION

IMAGE COURTESY OF ESRI/USGS



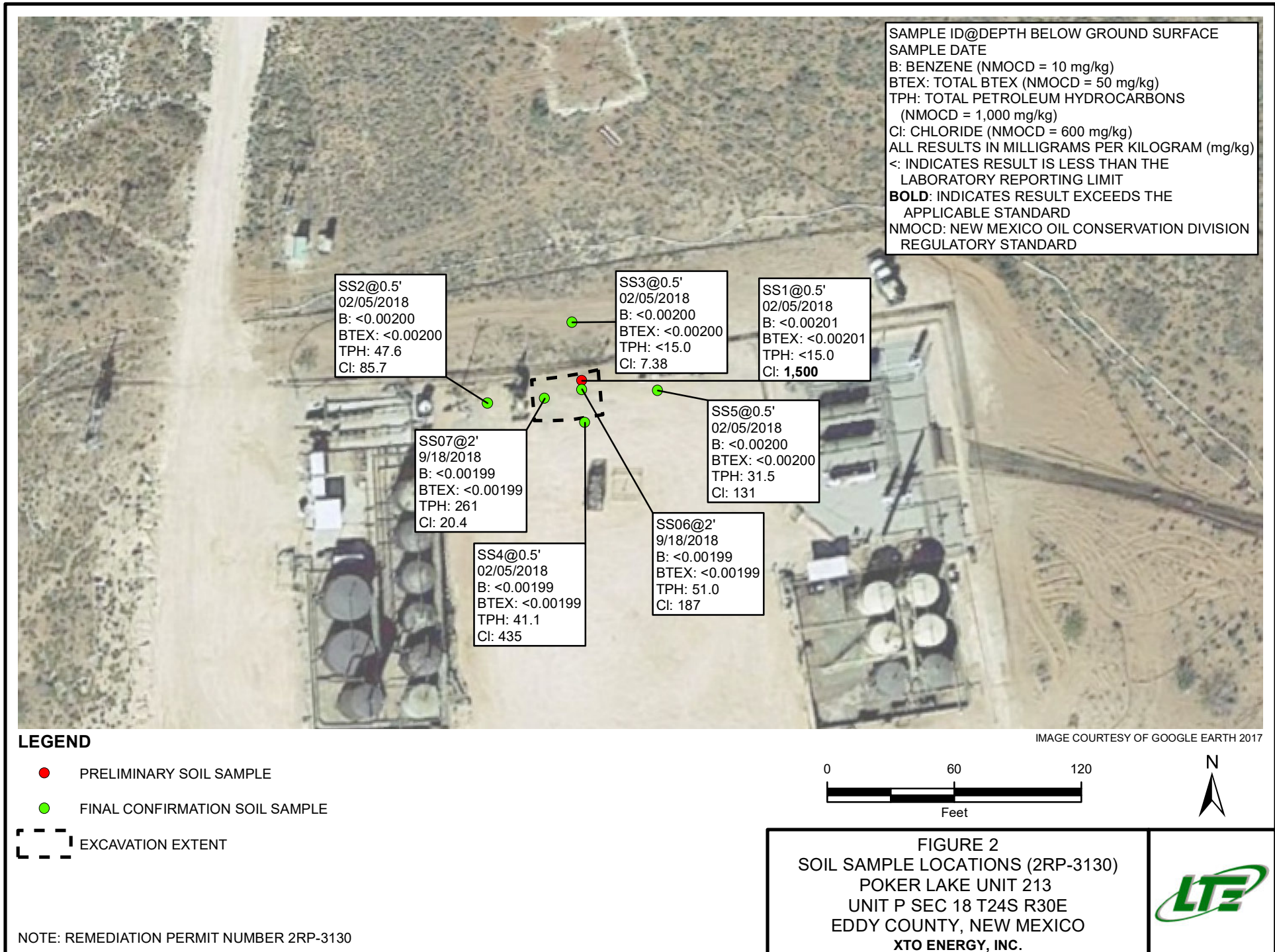
NOTE: REMEDIATION PERMIT  
NUMBERS 2RP-3130 & 2RP-4745

**FIGURE 1**  
**SITE LOCATION MAP**  
**POKER LAKE UNIT 213**  
**UNIT P SEC 18 T24S R30E**  
**EDDY COUNTY, NEW MEXICO**  
**XTO ENERGY, INC.**

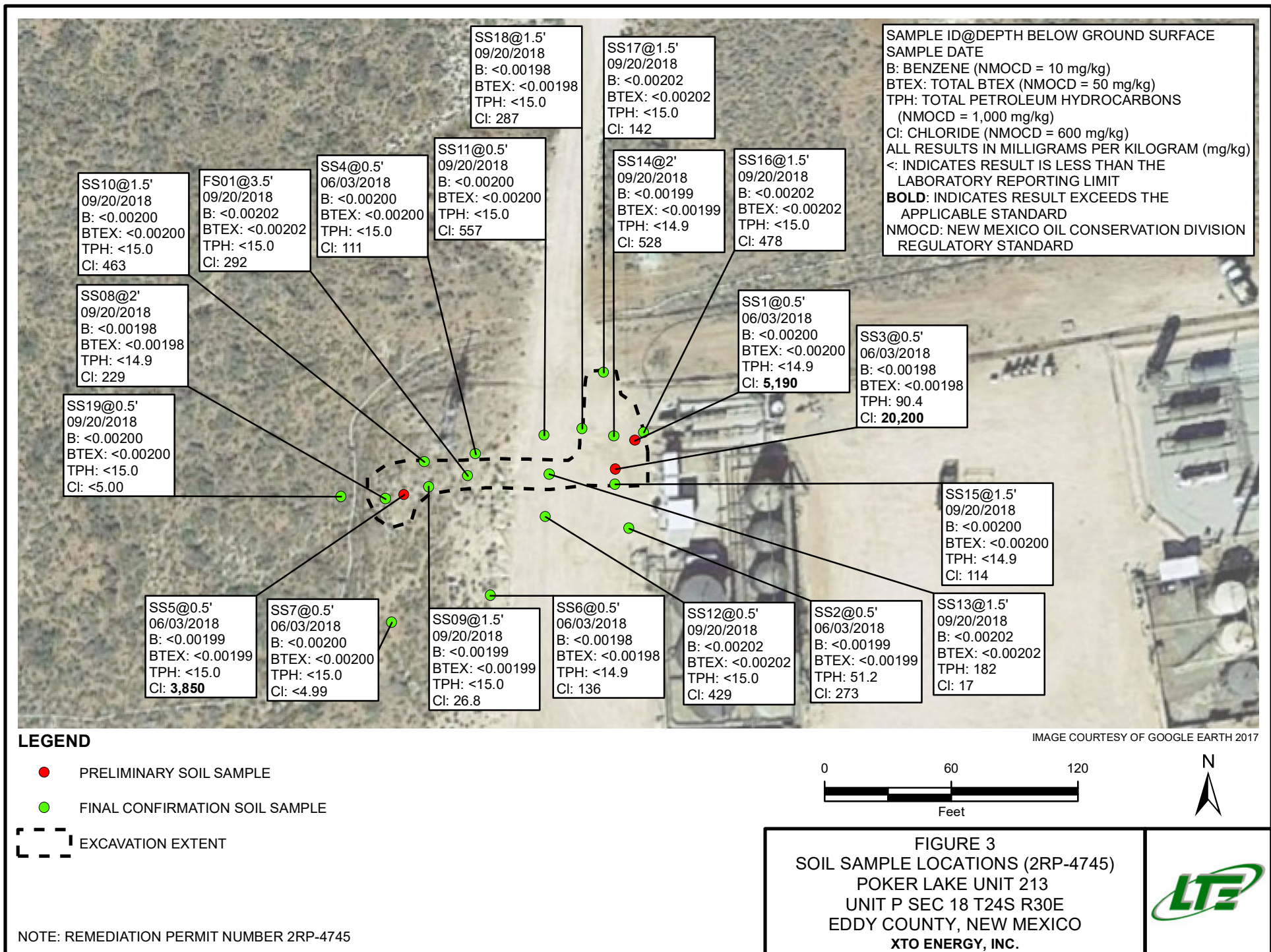


P:\XTO Energy\GIS\MXD\012918114\_PLU 213\012918114\_FIG01\_SL\_2018\_3130\_4745.mxd









TABLES



**TABLE 2**  
**SOIL ANALYTICAL RESULTS**

**POKER LAKE UNIT 213**  
**REMEDIATION PERMIT NUMBER 2RP-4745**  
**EDDY COUNTY, NEW MEXICO**  
**XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 ORO (mg/kg)	GRO and DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS1	0.5	06/03/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	5,190
SS2	0.5	06/03/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	51.2	<15.0	51.2	51.2	273
SS3	0.5	06/03/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	90.4	<15.0	90.4	90.4	<b>20,200</b>
SS4	0.5	06/03/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	111
SS5	0.5	06/03/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<b>3,850</b>
SS6	0.5	06/03/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<14.9	<14.9	<14.9	<14.9	<14.9	136
SS7	0.5	06/03/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99
FS01	3.5	09/20/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	292
SS08	2	09/20/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<14.9	<14.9	<14.9	<14.9	<14.9	229
SS09	1.5	09/20/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	26.8
SS10	1.5	09/20/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	463
SS11	0.5	09/20/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	557
SS12	0.5	09/20/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	429
SS13	1.5	09/20/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	149	33.1	149	182	17.0
SS14	2	09/20/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	<14.9	528
SS15	1.5	09/20/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	114
SS16	1.5	09/20/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	478
SS17	1.5	09/20/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	142
SS18	1.5	09/20/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	287
SS19	0.5	09/20/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
NMOCD Remediation Action Levels			10	NE	NE	NE	50	NE	NE	NE	NE	1,000	600

**Notes:**

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

mg/kg - milligrams per kilogram

NE - not established

NMOCD - New Mexico Oil Conservation Division

DRO - diesel range organics

GRO - gasoline range organics

ORO - oil range organics

TPH - total petroleum hydrocarbons

&lt; - indicates result is below laboratory reporting limits

**Bold** - indicates result exceeds the applicable regulatory standard.

**TABLE 1  
SOIL ANALYTICAL RESULTS**

**POKER LAKE UNIT 213  
REMEDIATION PERMIT NUMBER 2RP-3130  
EDDY COUNTY, NEW MEXICO  
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 ORO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS1	0.5	02/05/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<b>1,500</b>
SS2	0.5	02/05/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	47.6	<15.0	47.6	85.7
SS3	0.5	02/05/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	7.38
SS4	0.5	02/05/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	41.1	<14.9	41.1	435
SS5	0.5	02/05/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	31.5	<15.0	31.5	131
SS06	2	09/18/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	51.0	<14.9	51.0	187
SS07	2	09/18/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	261	<15.0	261	20.4
NMOCD Remediation Action Levels			10	NE	NE	NE	50	NE	NE	NE	1,000	600

**Notes:**

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

mg/kg - milligrams per kilogram

NE - not established

NMOCD - New Mexico Oil Conservation Division

DRO - diesel range organics

GRO - gasoline range organics

ORO - oil range organics

TPH - total petroleum hydrocarbons

&lt; - indicates result is below laboratory reporting limits

**Bold** - indicates result exceeds the applicable regulatory standard.



ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-3130 and 2RP-4745)



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

State of New Mexico  
Energy Minerals and Natural Resources

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

## NM OIL CONSERVATION

ARTESIA DISTRICT

JUL 14 2015

Form C-141  
Revised August 8, 2011

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

RECEIVED

## Release Notification and Corrective Action

**NAB1520128523** **OPERATOR** ☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P. <b>200737</b>	Contact: Bradley Blevins
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: PLU 213	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner:	API No. 3001533859
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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
P	18	24S	30E	860		660		Eddy

Latitude 32.212740 Longitude 103.914387

## NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 13 barrels produced water	Volume Recovered: 4 barrels produced water
Source of Release: Rubber inside Vic clamp failed on water transfer pump.	Date and Hour of Occurrence 7-13-15 @ 2:00pm	Date and Hour of Discovery 7-13-15 @ 2:14pm
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.	
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.* BOPCO EHS was notified of a release that occurred at the PLU 213. The release occurred on a water transfer line that runs from the 213 production side to the 213 SWD battery (opposite side of location). The rubber on the inside of the Vic clamp failed causing produced water to be released.		
Describe Area Affected and Cleanup Action Taken.* A vacuum truck was called to location and recovered 4 barrels of produced water.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		

Signature: <i>Bradley Blevins</i>	OIL CONSERVATION DIVISION	
Printed Name: Bradley Blevins	Signed By <i>M. L. Brandon</i> Approved by Environmental Specialist:	
Title: Assistant Remediation Foreman	Approval Date: <b>7/20/15</b>	Expiration Date: <b>NIA</b>
E-mail Address: bblevins@basspet.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <b>7-14-15</b> Phone: 432-214-3704	Mediation per O.C.D. Rules & Guidelines	

SUBMIT REMEDIATION PROPOSAL NO  
LATER THAN: **8/20/15**

2RP-3130

**Bratcher, Mike, EMNRD**

---

**From:** Blevins, Bradley <BBlevins@BassPet.Com>  
**Sent:** Tuesday, July 14, 2015 3:56 PM  
**To:** Bratcher, Mike, EMNRD; Patterson, Heather, EMNRD; Amos, James  
**Cc:** Savoie, Tony A.; Blevins, Bradley  
**Subject:** Initial C-141 PLU 213  
**Attachments:** doc04428720150714145043.pdf

All,

Please find the attached initial C-141 for the release that occurred at the PLU 213. The rubber on the inside of a vic clamp failed releasing 13 barrels of produced water, 4 barrels was recovered by vacuum truck. If you have any questions or concerns please let me know. Thank you.

Brad Blevins  
Assistant Remediation Foreman  
BOPCO, LP  
522 W. Mermod, Suite 704  
Carlsbad, NM 88220  
Office-575-887-7329  
Cell-1-432-214-3704  
[bblevins@basspet.com](mailto:bblevins@basspet.com)

**Bratcher, Mike, EMNRD**

---

**From:** Blevins, Bradley <BBlevins@BassPet.Com>  
**Sent:** Tuesday, July 14, 2015 3:27 PM  
**To:** Bratcher, Mike, EMNRD; Patterson, Heather, EMNRD; Amos, James  
**Cc:** Savoie, Tony A.; Blevins, Bradley  
**Subject:** PLU 213 Release\_7-13-15

All,

BOPCO EHS was notified of a release that occurred at the PLU 213 battery. The release occurred on a water transfer line that runs from the 213 production side to the 213 SWD battery (opposite side of location). The rubber on the inside of the Vic clamp failed causing produced water to be released. 13 barrels of produced water was released and 4 barrels was recovered.

32.212740 -103.914387

3001533859	POKER LAKE UNIT No. 213	BOPCO, L.P.	P -18-24S-30E ( 860 FSL & 660 FEL)
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Brad Blevins  
Assistant Remediation Foreman  
BOPCO, LP  
522 W. Mermod, Suite 704  
Carlsbad, NM 88220  
Office-575-887-7329  
Cell-1-432-214-3704  
[bblevins@basspet.com](mailto:bblevins@basspet.com)



**From:** [Weaver, Crystal, EMNRD](#)  
**To:** ["Foust, Bryan"](#); [Bratcher, Mike, EMNRD](#); [jamos@blm.gov](mailto:jamos@blm.gov); [Tucker, Shelly](#)  
**Cc:** [Ruth, Amy](#)  
**Subject:** RE: Initial C141 for PLU 213 fire  
**Date:** Wednesday, June 14, 2017 8:48:00 AM  
**Attachments:** [2RP-3130.pdf](#)

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Hey Jacob,

Also at the same location of PLU #213 BOPCO had a release occur back on 7/13/15 and it was given the RP number of 2RP-3130. We haven't had any follow up on this release since we received the initial C-141 (I attached the original initial C-141 to this email). Is there any way this one could be looked into while you all are working on the current release of 2RP-4243?

Thank you and let me know if you have any questions or concerns.

Sincerely,

---

**From:** Foust, Bryan [mailto:[Bryan\\_Foust@xtoenergy.com](mailto:Bryan_Foust@xtoenergy.com)]  
**Sent:** Tuesday, June 6, 2017 1:30 PM  
**To:** Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; [jamos@blm.gov](mailto:jamos@blm.gov); Tucker, Shelly <[stucker@blm.gov](mailto:stucker@blm.gov)>  
**Cc:** Ruth, Amy <[Amy\\_Ruth@xtoenergy.com](mailto:Amy_Ruth@xtoenergy.com)>  
**Subject:** RE: Initial C141 for PLU 213 fire

Sorry again, it's been a heck of a day here. Here's the correct, updated, signed version. Thanks for your patience

Thanks,  
Jacob Foust  
XTO Energy  
432-266-2663

---

**From:** Foust, Bryan  
**Sent:** Tuesday, June 06, 2017 1:25 PM  
**To:** Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD; '[jamos@blm.gov](mailto:jamos@blm.gov)'; 'Tucker, Shelly'  
**Cc:** Ruth, Amy  
**Subject:** RE: Initial C141 for PLU 213 fire

Oops, I forgot to attach it. Sorry about that, here it is!

Thanks,  
Jacob Foust  
XTO Energy

432-266-2663

---

**From:** Foust, Bryan  
**Sent:** Tuesday, June 06, 2017 1:12 PM  
**To:** Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD; 'jamos@blm.gov'; 'Tucker, Shelly'  
**Cc:** Ruth, Amy; Sanders, Toady  
**Subject:** Initial C141 for PLU 213 fire

Attached is the initial C141 for the fire at the PLU 213 battery on 5/27/17. Please let me know if you have any questions or comments.

Thanks,  
Jacob Foust  
XTO Energy  
432-266-2663

## Bratcher, Mike, EMNRD

---

**From:** Bratcher, Mike, EMNRD  
**Sent:** Friday, September 15, 2017 12:10 PM  
**To:** 'Robbie Runnels'  
**Cc:** Tucker, Shelly; Amy Ruth; Weaver, Crystal, EMNRD  
**Subject:** RE: XTO Energy - Poker Lake Unit 213 - CAP (2RP-4243, 2RP-4265)

RE: XTO \* Poker Lake Unit 213 \* 2RP-4243 (DOR:5/2/17) & 2RP-4265 (DOR: 6/8/17)

Greetings,

It is OCD's understanding that remedial work at the above referenced site was commenced and may still be ongoing. While OCD understands the urgency to return the facility to production, be advised that remedial work performed absent an approved remediation proposal, is done "at risk". Please provide an update on activities as soon as possible. Also, be aware that OCD records indicate there is another open release associated with this site, other than the two indicated above. The tracking number is **2RP-3130** with the date of release shown as 7/13/15. Please advise as to the intent for addressing this release. Please include Crystal Weaver on all future correspondence.

Thank you,

Mike Bratcher  
NMOCD District 2  
811 South First Street  
Artesia, NM 88210  
575-748-1283 Ext 108

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

**From:** Robbie Runnels [mailto:rrunnels@basinenv.com]  
**Sent:** Tuesday, August 22, 2017 1:14 PM  
**To:** Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>  
**Cc:** Tucker, Shelly <stucker@blm.gov>; Amy Ruth <amy\_ruth@XTOenergy.com>  
**Subject:** XTO Energy - Poker Lake Unit 213 - CAP (2RP-4243, 2RP-4265)

Mr. Bratcher,

Attached is the Corrective Action Plan for the aforementioned site. Please let me know if you have any questions or comments.

Best Regards,

Robbie Runnels

Project Manager

Basin Environmental Service Technologies  
3100 Plains Hwy.  
P.O. Box 301  
Lovington, NM 88260  
p. 575-396-2378 m. 575-441-5598  
f. 575-396-1429  
[rrunnels@basinenv.com](mailto:rrunnels@basinenv.com)



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-3130
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-3130
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

### Location of Release Source

Latitude 32.212740° Longitude -103.914387°  
*(NAD 83 in decimal degrees to 5 decimal places)*

Site Name: PLU 213	Site Type: Exploration and Production
Date Release Discovered: 7/13/2015	API#: 30-015-33859

Unit Letter	Section	Township	Range	County
P	18	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)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls): 13 bbls	Volume Recovered (bbls): 4 bbl
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release:


The release occurred on a water transfer line that runs from the PLU 213 production side to the PLU 213 SWD battery (opposite side of location). The rubber on the inside of the Vic clamp failed causing produced water to be released.

Incident ID	Page 22 of 142
District RP	2RP-3130
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?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

### Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped.	
<input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&amp;E Coordinator</u>
Signature: 	Date: <u>10/22/2018</u>
email: <u>Kyle.Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<b><u>OCD Only</u></b>	
Received by: _____	Date: _____

Incident ID	Page 23 of 142
District RP	2RP-3130
Facility ID	
Application ID	

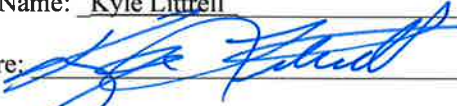
## Closure

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 Coordinator  
Signature:  Date: 10/22/2018  
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: Ashley Maxwell Date: 3/22/2023  
Printed Name: Ashley Maxwell Title: Environmental Specialist

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

MAY 14 2018

Form C-141  
Revised April 3, 2017

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

Submit 1 Copy to appropriate District Office in  
DISTRICT II-ARTESIA, NM 88210 in accordance with 19.15.29 NMAC.

## Release Notification and Corrective Action

**NAB1813452794** **OPERATOR** ☒ Initial Report ☐ Final Report

Name of Company: XTO Energy **260137** Contact: Kyle Littrell  
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220 Telephone No: 432-221-7331  
Facility Name: Poker Lake Unit 213 Facility Type: Exploration and Production

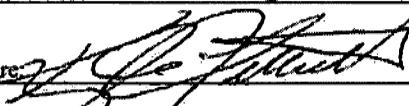


Surface Owner: Federal Mineral Owner: Federal API No: 30-015-33859

## LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	18	24S	30E	860	South	660	East	Eddy

Latitude 32.212716 Longitude -103.914387 NAD83

## NATURE OF RELEASE

Type of Release Produced water	Volume of Release 10 bbl	Volume Recovered 2.5 bbl
Source of Release H-pump	Date and Hour of Occurrence 4/29/2018, AM	Date and Hour of Discovery 4/29/2018, 9:00 AM
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour: N/A	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	
If a Watercourse was Impacted, Describe Fully.* N/A		
Describe Cause of Problem and Remedial Action Taken.* Release was due to worn threads on a stainless steel T connection on an H-pump. H-pump was shut down and T connection replaced before returning to production.		
Describe Area Affected and Cleanup Action Taken.* Spill originated on northwestern end of location. Fluid spilled west across lease road and into pasture. Vacuum truck was dispatched and recovered 2.5bbl of produced water. An environmental contractor has been retained to assist in delineation and remediation efforts.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		
Signature: 		OIL CONSERVATION DIVISION
Printed Name: Kyle Littrell		Signed By:  Approved by Environmental Specialist:
Title: SH&E Coordinator	Approval Date: 5/14/18	Expiration Date: N/A
E-mail Address: Kyle.Littrell@xtoenergy.com	Conditions of Approval: See Attached	Attached: 
Date: 5-14-2018	Phone: 432-221-7331	

\* Attach Additional Sheets If Necessary



Operator/Responsible Party,

The OCD has received the form C-141 you provided on 5/14/2018 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4745 has been assigned. Please refer to this case number in all future correspondence.

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

*The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]*

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 2 office in ARTESIA on or before 6/14/2018. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C<sub>6</sub> thru C<sub>36</sub>), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C<sub>6</sub> thru C<sub>36</sub>), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

**Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.**

**Jim Griswold**

OCD Environmental Bureau Chief

1220 South St. Francis Drive

Santa Fe, New Mexico 87505

505-476-3465

jim.griswold@state.nm.us

**Bratcher, Mike, EMNRD**

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**From:** Littrell, Kyle <Kyle\_Littrell@xtoenergy.com>  
**Sent:** Monday, May 14, 2018 10:13 AM  
**To:** Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD; Shelly Tucker; Jim Amos  
**Cc:** Sanders, Toady; McSpadden, Wes; Ruth, Amy; Foust, Bryan  
**Subject:** Initial C-141 - 4-29-18 Poker Lake Unit 213 (API 30-015-33859)  
**Attachments:** Initial C-141 PLU 213 4-29-18.pdf

Good Morning,

Please find attached the initial C-141 detailing the accidental release from the referenced facility. Please contact me with any questions or concerns. Thanks. --Kyle

**Kyle Littrell**  
SH&E Coordinator  
XTO Energy Inc.  
Delaware Division  
Phone:(432)-221-7331 | Mobile:(970)-317-1867  
[kyle\\_littrell@xtoenergy.com](mailto:kyle_littrell@xtoenergy.com)

An **ExxonMobil** Subsidiary

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  
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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-4745
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-4745
Contact mailing address: 522 W. Mermood, Suite 704 Carlsbad, NM 88220	

### Location of Release Source

Latitude 32.212716° Longitude -103.914387°  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Poker Lake Unit 213	Site Type: Exploration and Production
Date Release Discovered: 4/29/2018	API#: 30-015-33859

Unit Letter	Section	Township	Range	County
P	18	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)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls): 10 bbls	Volume Recovered (bbls): 2.5 bbl
	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:

Release was due to worn threads on a stainless-steel T connection on an H-pump. The H-pump was shut down and T connection replaced before returning to production.



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

## Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped.	
<input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&amp;E Coordinator</u>
Signature: 	Date: <u>10/22/2018</u>
email: <u>kyle.littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<b><u>OCD Only</u></b>	
Received by: _____	Date: _____



Incident ID	Page 30 of 142
District RP	2RP-4745
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 Coordinator  
Signature:  Date: 10/22/2018  
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: Ashley Maxwell Date: 3/22/2023  
Printed Name: Ashley Maxwell Title: Environmental Specialist

**ATTACHMENT 2: PHOTOGRAPHIC LOG**

## PHOTOGRAPHIC LOG



**Photograph 1:** View northeast of equipment and excavation.



**Photograph 2:** View south of equipment and excavation.



## PHOTOGRAPHIC LOG



**Photograph 1:** View east of equipment and excavation.



**Photograph 2:** View west of excavation in pasture.

ATTACHMENT 3: LABORATORY ANALYTICAL REPORTS



# Analytical Report 575590

for  
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 213 RP 3130

15-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)





15-FEB-18

Project Manager: **Adrian Baker**

**LT Environmental, Inc.**

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **575590**

**PLU 213 RP 3130**

Project Address: Carlsbad, 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) 575590. 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. 575590 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 575590****LT Environmental, Inc., Arvada, CO**

PLU 213 RP 3130

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS1	S	02-05-18 16:22	6"	575590-001
SS2	S	02-05-18 16:25	6"	575590-002
SS3	S	02-05-18 16:27	6"	575590-003
SS4	S	02-05-18 16:30	Surface	575590-004
SS5	S	02-05-18 16:33	6"	575590-005

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: PLU 213 RP 3130**

Project ID:

Work Order Number(s): 575590

Report Date: 15-FEB-18

Date Received: 02/07/2018

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**Sample receipt non conformances and comments:**

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**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3040899 BTEX by EPA 8021B

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

Batch: LBA-3040912 BTEX by EPA 8021B

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

Batch: LBA-3040996 BTEX by EPA 8021B

Lab Sample ID 575590-005 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 575590-005.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

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

Surrogate 1,4-Difluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 575590-005 S, 575590-005 SD.



# Certificate of Analysis Summary 575590

LT Environmental, Inc., Arvada, CO

Project Name: PLU 213 RP 3130



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Wed Feb-07-18 08:00 am

Report Date: 15-FEB-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	575590-001	575590-002	575590-003	575590-004	575590-005	
	<i>Field Id:</i>	SS1	SS2	SS3	SS4	SS5	
	<i>Depth:</i>	6"-	6"-	6"-	Surface-	6"-	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Feb-05-18 16:22	Feb-05-18 16:25	Feb-05-18 16:27	Feb-05-18 16:30	Feb-05-18 16:33	
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Feb-13-18 10:00	Feb-13-18 10:00	Feb-12-18 09:00	Feb-12-18 09:00	Feb-12-18 17:00	
	<i>Analyzed:</i>	Feb-13-18 20:13	Feb-13-18 20:31	Feb-12-18 17:18	Feb-12-18 17:36	Feb-12-18 20:04	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	
Toluene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	
m,p-Xylenes		<0.00402 0.00402	<0.00399 0.00399	<0.00401 0.00401	<0.00398 0.00398	<0.00401 0.00401	
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	
Total BTEX		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Feb-14-18 17:00	Feb-14-18 17:00	Feb-14-18 17:00	Feb-14-18 17:00	Feb-14-18 17:00	
	<i>Analyzed:</i>	Feb-15-18 11:56	Feb-15-18 12:13	Feb-15-18 12:18	Feb-15-18 12:24	Feb-15-18 12:29	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		1500 5.00	85.7 5.00	7.38 5.00	435 4.95	131 4.91	
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Feb-10-18 13:00	Feb-10-18 13:00	Feb-10-18 13:00	Feb-10-18 13:00	Feb-10-18 13:00	
	<i>Analyzed:</i>	Feb-11-18 18:33	Feb-11-18 19:35	Feb-11-18 19:56	Feb-11-18 20:17	Feb-11-18 20:39	
	<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	<14.9 14.9	<15.0 15.0	
Diesel Range Organics (DRO)		<15.0 15.0	47.6 15.0	<15.0 15.0	41.1 14.9	31.5 15.0	
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	
Total TPH		<15.0 15.0	47.6 15.0	<15.0 15.0	41.1 14.9	31.5 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 575590

## LT Environmental, Inc., Arvada, CO

PLU 213 RP 3130

Sample Id: **SS1** Matrix: **Soil** Date Received: 02.07.18 08.00  
 Lab Sample Id: 575590-001 Date Collected: 02.05.18 16.22 Sample Depth: 6"  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: **OJS** % Moisture:  
 Analyst: **OJS** Date Prep: 02.14.18 17.00 Basis: **Wet Weight**  
 Seq Number: 3041118

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>1500</b>	5.00	mg/kg	02.15.18 11.56		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: **ARM** % Moisture:  
 Analyst: **ARM** Date Prep: 02.10.18 13.00 Basis: **Wet Weight**  
 Seq Number: 3040800

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.11.18 18.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.11.18 18.33	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.11.18 18.33	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.11.18 18.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	02.11.18 18.33	
o-Terphenyl	84-15-1	98	%	70-135	02.11.18 18.33	



# Certificate of Analytical Results 575590

## LT Environmental, Inc., Arvada, CO

PLU 213 RP 3130

Sample Id: **SS1**  
 Lab Sample Id: 575590-001

Matrix: **Soil**  
 Date Collected: 02.05.18 16.22

Date Received: 02.07.18 08.00  
 Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: **ALJ**

% Moisture:

Analyst: **ALJ**

Date Prep: 02.13.18 10.00

Basis: **Wet Weight**

Seq Number: 3040912

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.13.18 20.13	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.13.18 20.13	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.13.18 20.13	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.13.18 20.13	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.13.18 20.13	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.13.18 20.13	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.13.18 20.13	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	120	%	80-120	02.13.18 20.13		
1,4-Difluorobenzene	540-36-3	92	%	80-120	02.13.18 20.13		





# Certificate of Analytical Results 575590

## LT Environmental, Inc., Arvada, CO

PLU 213 RP 3130

Sample Id: **SS2**  
 Lab Sample Id: 575590-002

Matrix: Soil  
 Date Collected: 02.05.18 16.25

Date Received: 02.07.18 08.00  
 Sample Depth: 6"

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3041118

Date Prep: 02.14.18 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	85.7	5.00	mg/kg	02.15.18 12.13		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3040800

Date Prep: 02.10.18 13.00

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	02.11.18 19.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	47.6	15.0	mg/kg	02.11.18 19.35		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.11.18 19.35	U	1
Total TPH	PHC635	47.6	15.0	mg/kg	02.11.18 19.35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	02.11.18 19.35	
o-Terphenyl	84-15-1	103	%	70-135	02.11.18 19.35	



# Certificate of Analytical Results 575590

## LT Environmental, Inc., Arvada, CO

PLU 213 RP 3130

Sample Id: **SS2**  
 Lab Sample Id: 575590-002

Matrix: **Soil**  
 Date Collected: 02.05.18 16.25

Date Received: 02.07.18 08.00  
 Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: **ALJ**

% Moisture:

Analyst: **ALJ**

Date Prep: 02.13.18 10.00

Basis: **Wet Weight**

Seq Number: 3040912

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.13.18 20.31	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.13.18 20.31	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.13.18 20.31	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.13.18 20.31	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.13.18 20.31	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.13.18 20.31	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.13.18 20.31	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	99	%	80-120	02.13.18 20.31		
4-Bromofluorobenzene	460-00-4	120	%	80-120	02.13.18 20.31		



# Certificate of Analytical Results 575590



## LT Environmental, Inc., Arvada, CO

PLU 213 RP 3130

Sample Id: **SS3** Matrix: **Soil** Date Received: 02.07.18 08.00  
 Lab Sample Id: 575590-003 Date Collected: 02.05.18 16.27 Sample Depth: 6"  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: **OJS** % Moisture:  
 Analyst: **OJS** Date Prep: 02.14.18 17.00 Basis: **Wet Weight**  
 Seq Number: 3041118

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.38	5.00	mg/kg	02.15.18 12.18		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: **ARM** % Moisture:  
 Analyst: **ARM** Date Prep: 02.10.18 13.00 Basis: **Wet Weight**  
 Seq Number: 3040800

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.11.18 19.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.11.18 19.56	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.11.18 19.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.11.18 19.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	02.11.18 19.56	
o-Terphenyl	84-15-1	99	%	70-135	02.11.18 19.56	



# Certificate of Analytical Results 575590



## LT Environmental, Inc., Arvada, CO

PLU 213 RP 3130

Sample Id: SS3  
Lab Sample Id: 575590-003

Matrix: Soil  
Date Collected: 02.05.18 16.27

Date Received: 02.07.18 08.00  
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040899

Prep Method: SW5030B

% Moisture:

Date Prep: 02.12.18 09.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.12.18 17.18	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.12.18 17.18	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.12.18 17.18	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.12.18 17.18	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.12.18 17.18	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.12.18 17.18	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.12.18 17.18	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	117	%	80-120	02.12.18 17.18		
1,4-Difluorobenzene	540-36-3	83	%	80-120	02.12.18 17.18		



## Certificate of Analytical Results 575590

## LT Environmental, Inc., Arvada, CO

PLU 213 RP 3130

Sample Id: **SS4**  
 Lab Sample Id: 575590-004

Matrix: Soil  
 Date Collected: 02.05.18 16.30

Date Received: 02.07.18 08.00  
 Sample Depth: Surface

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3041118

Date Prep: 02.14.18 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	435	4.95	mg/kg	02.15.18 12.24		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3040800

Date Prep: 02.10.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.11.18 20.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	41.1	14.9	mg/kg	02.11.18 20.17		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	02.11.18 20.17	U	1
Total TPH	PHC635	41.1	14.9	mg/kg	02.11.18 20.17		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	02.11.18 20.17	
o-Terphenyl	84-15-1	99	%	70-135	02.11.18 20.17	





# Certificate of Analytical Results 575590

## LT Environmental, Inc., Arvada, CO

PLU 213 RP 3130

Sample Id: **SS4**  
 Lab Sample Id: 575590-004

Matrix: Soil  
 Date Collected: 02.05.18 16.30

Date Received: 02.07.18 08.00  
 Sample Depth: Surface

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.12.18 09.00

Basis: Wet Weight

Seq Number: 3040899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.12.18 17.36	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.12.18 17.36	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.12.18 17.36	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.12.18 17.36	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.12.18 17.36	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.12.18 17.36	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.12.18 17.36	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	84	%	80-120	02.12.18 17.36		
4-Bromofluorobenzene	460-00-4	95	%	80-120	02.12.18 17.36		



# Certificate of Analytical Results 575590

## LT Environmental, Inc., Arvada, CO

PLU 213 RP 3130

Sample Id: **SS5**  
 Lab Sample Id: 575590-005

Matrix: Soil  
 Date Collected: 02.05.18 16.33

Date Received: 02.07.18 08.00  
 Sample Depth: 6"

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3041118

Date Prep: 02.14.18 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	131	4.91	mg/kg	02.15.18 12.29		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3040800

Date Prep: 02.10.18 13.00

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	02.11.18 20.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	31.5	15.0	mg/kg	02.11.18 20.39		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.11.18 20.39	U	1
Total TPH	PHC635	31.5	15.0	mg/kg	02.11.18 20.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	02.11.18 20.39	
o-Terphenyl	84-15-1	99	%	70-135	02.11.18 20.39	



# Certificate of Analytical Results 575590

## LT Environmental, Inc., Arvada, CO

PLU 213 RP 3130

Sample Id: **SS5**  
 Lab Sample Id: 575590-005

Matrix: **Soil**  
 Date Collected: 02.05.18 16.33

Date Received: 02.07.18 08.00  
 Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: **ALJ**

% Moisture:

Analyst: **ALJ**

Date Prep: 02.12.18 17.00

Basis: **Wet Weight**

Seq Number: 3040996

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.12.18 20.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.12.18 20.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.12.18 20.04	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.12.18 20.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.12.18 20.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.12.18 20.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.12.18 20.04	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	99	%	80-120	02.12.18 20.04		
4-Bromofluorobenzene	460-00-4	99	%	80-120	02.12.18 20.04		



## 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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(602) 437-0330	



## LT Environmental, Inc.

PLU 213 RP 3130

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3041118

MB Sample Id: 7639166-1-BLK

Matrix: Solid

LCS Sample Id: 7639166-1-BKS

Prep Method: E300P

Date Prep: 02.14.18

LCSD Sample Id: 7639166-1-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	272	109	266	106	90-110	2	20	mg/kg	02.15.18 09:46	

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3041118

Parent Sample Id: 575589-001

Matrix: Soil

MS Sample Id: 575589-001 S

Prep Method: E300P

Date Prep: 02.14.18

MSD Sample Id: 575589-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	297	248	540	98	606	125	90-110	12	20	mg/kg	02.15.18 10:31	X

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3041118

Parent Sample Id: 575589-011

Matrix: Soil

MS Sample Id: 575589-011 S

Prep Method: E300P

Date Prep: 02.14.18

MSD Sample Id: 575589-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	275	110	281	112	90-110	2	20	mg/kg	02.15.18 11:40	X

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3040800

MB Sample Id: 7638965-1-BLK

Matrix: Solid

LCS Sample Id: 7638965-1-BKS

Prep Method: TX1005P

Date Prep: 02.10.18

LCSD Sample Id: 7638965-1-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	1010	101	1030	103	70-135	2	35	mg/kg	02.11.18 17:53	
Diesel Range Organics (DRO)	<15.0	1000	1130	113	1100	110	70-135	3	35	mg/kg	02.11.18 17:53	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		114		114		70-135	%	02.11.18 17:53
o-Terphenyl	105		113		108		70-135	%	02.11.18 17:53

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 213 RP 3130

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3040800

Parent Sample Id: 575590-001

Matrix: Soil

MS Sample Id: 575590-001 S

Prep Method: TX1005P

Date Prep: 02.10.18

MSD Sample Id: 575590-001 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	999	815	82	840	84	70-135	3	35	mg/kg	02.11.18 18:55	
Diesel Range Organics (DRO)	<15.0	999	920	92	969	97	70-135	5	35	mg/kg	02.11.18 18:55	

## Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	95		91		70-135	%	02.11.18 18:55
o-Terphenyl	85		93		70-135	%	02.11.18 18:55

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3040899

MB Sample Id: 7639034-1-BLK

Matrix: Solid

LCS Sample Id: 7639034-1-BKS

Prep Method: SW5030B

Date Prep: 02.12.18

LCSD Sample Id: 7639034-1-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	0.101	102	0.105	105	70-130	4	35	mg/kg	02.12.18 08:26	
Toluene	<0.00199	0.0994	0.0964	97	0.100	100	70-130	4	35	mg/kg	02.12.18 08:26	
Ethylbenzene	<0.00199	0.0994	0.101	102	0.105	105	71-129	4	35	mg/kg	02.12.18 08:26	
m,p-Xylenes	<0.00398	0.199	0.196	98	0.204	102	70-135	4	35	mg/kg	02.12.18 08:26	
o-Xylene	<0.00199	0.0994	0.0987	99	0.103	103	71-133	4	35	mg/kg	02.12.18 08:26	

## Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	86		80		83		80-120	%	02.12.18 08:26
4-Bromofluorobenzene	92		104		109		80-120	%	02.12.18 08:26

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3040996

MB Sample Id: 7639096-1-BLK

Matrix: Solid

LCS Sample Id: 7639096-1-BKS

Prep Method: SW5030B

Date Prep: 02.12.18

LCSD Sample Id: 7639096-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.100	99	0.112	112	70-130	11	35	mg/kg	02.12.18 18:14	
Toluene	<0.00201	0.101	0.0986	98	0.107	107	70-130	8	35	mg/kg	02.12.18 18:14	
Ethylbenzene	<0.00201	0.101	0.103	102	0.112	112	71-129	8	35	mg/kg	02.12.18 18:14	
m,p-Xylenes	<0.00402	0.201	0.210	104	0.227	114	70-135	8	35	mg/kg	02.12.18 18:14	
o-Xylene	<0.00201	0.101	0.102	101	0.111	111	71-133	8	35	mg/kg	02.12.18 18:14	

## Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	80		104		81		80-120	%	02.12.18 18:14
4-Bromofluorobenzene	86		90		96		80-120	%	02.12.18 18:14

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 213 RP 3130

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3040912

MB Sample Id: 7639041-1-BLK

Matrix: Solid

LCS Sample Id: 7639041-1-BKS

Prep Method: SW5030B

Date Prep: 02.13.18

LCSD Sample Id: 7639041-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0990	0.0991	100	0.0885	89	70-130	11	35	mg/kg	02.13.18 11:26	
Toluene	<0.00198	0.0990	0.0965	97	0.0869	87	70-130	10	35	mg/kg	02.13.18 11:26	
Ethylbenzene	<0.00198	0.0990	0.100	101	0.0903	90	71-129	10	35	mg/kg	02.13.18 11:26	
m,p-Xylenes	<0.00396	0.198	0.195	98	0.176	88	70-135	10	35	mg/kg	02.13.18 11:26	
o-Xylene	<0.00198	0.0990	0.0993	100	0.0899	90	71-133	10	35	mg/kg	02.13.18 11:26	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	82		88		92		80-120	%	02.13.18 11:26
4-Bromofluorobenzene	112		119		115		80-120	%	02.13.18 11:26

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3040899

Parent Sample Id: 575589-001

Matrix: Soil

MS Sample Id: 575589-001 S

Prep Method: SW5030B

Date Prep: 02.12.18

MSD Sample Id: 575589-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0751	75	0.0796	79	70-130	6	35	mg/kg	02.12.18 09:08	
Toluene	<0.00201	0.100	0.0745	75	0.0779	77	70-130	4	35	mg/kg	02.12.18 09:08	
Ethylbenzene	<0.00201	0.100	0.0772	77	0.0802	79	71-129	4	35	mg/kg	02.12.18 09:08	
m,p-Xylenes	<0.00402	0.201	0.151	75	0.157	78	70-135	4	35	mg/kg	02.12.18 09:08	
o-Xylene	<0.00201	0.100	0.0756	76	0.0786	78	71-133	4	35	mg/kg	02.12.18 09:08	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		82		80-120	%	02.12.18 09:08
4-Bromofluorobenzene	96		112		80-120	%	02.12.18 09:08

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3040996

Parent Sample Id: 575590-005

Matrix: Soil

MS Sample Id: 575590-005 S

Prep Method: SW5030B

Date Prep: 02.12.18

MSD Sample Id: 575590-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0763	76	0.0805	81	70-130	5	35	mg/kg	02.12.18 18:51	
Toluene	<0.00200	0.0998	0.0622	62	0.0652	65	70-130	5	35	mg/kg	02.12.18 18:51	X
Ethylbenzene	<0.00200	0.0998	0.0479	48	0.0515	52	71-129	7	35	mg/kg	02.12.18 18:51	X
m,p-Xylenes	<0.00399	0.200	0.0943	47	0.102	51	70-135	8	35	mg/kg	02.12.18 18:51	X
o-Xylene	<0.00200	0.0998	0.0476	48	0.0509	51	71-133	7	35	mg/kg	02.12.18 18:51	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	46	**	42	**	80-120	%	02.12.18 18:51
4-Bromofluorobenzene	83		87		80-120	%	02.12.18 18:51

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 213 RP 3130

Analytical Method: BTEX by EPA 8021B

Seq Number: 3040912

Parent Sample Id: 576101-001

Matrix: Soil

MS Sample Id: 576101-001 S

Prep Method: SW5030B

Date Prep: 02.13.18

MSD Sample Id: 576101-001 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	0.0994	0.0829	83	0.0930	92	70-130	11	35	mg/kg	02.13.18 12:41	
Toluene	0.00203	0.0994	0.0440	42	0.0441	42	70-130	0	35	mg/kg	02.13.18 12:41	X
Ethylbenzene	<0.00199	0.0994	0.0437	44	0.0367	36	71-129	17	35	mg/kg	02.13.18 12:41	X
m,p-Xylenes	<0.00398	0.199	0.0860	43	0.0666	33	70-135	25	35	mg/kg	02.13.18 12:41	X
o-Xylene	<0.00199	0.0994	0.0430	43	0.0329	33	71-133	27	35	mg/kg	02.13.18 12:41	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	83		83		80-120	%	02.13.18 12:41
4-Bromofluorobenzene	81		80		80-120	%	02.13.18 12:41

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



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Revision 2016.1

# CHAIN OF CUSTODY

Page 1 of 1

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes											
Company Name / Branch: <b>LTE</b>		Project Name/Number: <b>PLU 213</b>		RP 2130													
Company Address: <b>3300 North A Street Bldg 1 #103</b>		Project Location: <b>Clarksburg, NM</b>															
Email: <b>donald@ltx.com</b>		Invoice To: <b>XTO Energy, Kyle Littel</b>															
Phone No:																	
Project Contact: <b>Patricia Baker</b>		PO Number: <b>80-015-380659</b>															
Sampler's Name: <b>Patricia Baker</b>																	
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Notes	Field Comments	
1	SS1	6"	8/6	422	S	1											
2	SS2	6"		425													
3	SS3	6"		427													
4	SS4	surface		430													
5	SS5	6"		433													
6																	
7																	
8																	
9																	
10																	
Turnaround Time (Business days)																	
<input type="checkbox"/> Same Day TAT		<input type="checkbox"/> 5 Day TAT															
<input type="checkbox"/> Next Day EMERGENCY		<input type="checkbox"/> 7 Day TAT															
<input type="checkbox"/> 2 Day EMERGENCY		<input type="checkbox"/> Contract TAT															
<input type="checkbox"/> 3 Day EMERGENCY		<input type="checkbox"/> Level II Report with TRRP checklist															
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:	2/6/18	1745	Received By:	1											
Relinquished by:		Date Time:			Received By:	2											
Relinquished by:		Date Time:			Received By:	3											
Relinquished by:		Date Time:			Received By:	4											
Relinquished by:		Date Time:			Received By:	5											
FED-EX / UPS: Tracking #																	
On Ice																	
Cooler Temp.																	
Thermo. Corr. Factor																	



Client: LT Environmental, Inc.

Date/ Time Received: 02/07/2018 08:00:00 AM

Work Order #: 575590

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)?	3.8
#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: 02/07/2018

Checklist reviewed by:

Jessica Kramer

Date: 02/07/2018

# Analytical Report 588293

for  
**LT Environmental, Inc.**

**Project Manager: Adrian Baker**

**PLU 213**

**012918114**

**08-AUG-18**

Collected By: Client



**1211 W. Florida Ave, Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-17-16), 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 (T104704400-18-15)

Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-17-3)

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

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

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)





08-AUG-18

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

Reference: XENCO Report No(s): **588293**  
**PLU 213**  
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) 588293. 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. 588293 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.***

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



**Sample Cross Reference 588293****LT Environmental, Inc., Arvada, CO**

PLU 213

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS1	S	06-03-18 11:40	6 In	588293-001
SS2	S	06-03-18 11:45	6 In	588293-002
SS3	S	06-03-18 11:50	6 In	588293-003
SS4	S	06-03-18 11:55	6 In	588293-004
SS5	S	06-03-18 12:00	6 In	588293-005
SS6	S	06-03-18 12:05	6 In	588293-006
SS7	S	06-03-18 12:10	6 In	588293-007



## CASE NARRATIVE

**Client Name:** *LT Environmental, Inc.*

**Project Name:** *PLU 213*

Project ID: 012918114

Work Order Number(s): 588293

Report Date: 08-AUG-18

Date Received: 06/06/2018

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**Sample receipt non conformances and comments:**

Per clients request, changed all sample dates from 06/04/18 to 06/03/18 JKR 08/08/18

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**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3053169 BTEX by EPA 8021B

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



# Certificate of Analysis Summary 588293

LT Environmental, Inc., Arvada, CO

Project Name: PLU 213



**Project Id:** 012918114  
**Contact:** Adrian Baker  
**Project Location:** NM

**Date Received in Lab:** Wed Jun-06-18 10:45 am  
**Report Date:** 08-AUG-18  
**Project Manager:** Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	588293-001	588293-002	588293-003	588293-004	588293-005	588293-006
	<i>Field Id:</i>	SS1	SS2	SS3	SS4	SS5	SS6
	<i>Depth:</i>	6- In	6- In	6- In	6- In	6- In	6- In
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-03-18 11:40	Jun-03-18 11:45	Jun-03-18 11:50	Jun-03-18 11:55	Jun-03-18 12:00	Jun-03-18 12:05
<b>BTEX by EPA 8021B SUB: T104704534-17-3</b>	<i>Extracted:</i>	Jun-07-18 15:30	Jun-07-18 17:10	Jun-07-18 17:20	Jun-07-18 17:40	Jun-07-18 18:00	Jun-07-18 18:20
	<i>Analyzed:</i>	Jun-07-18 15:38	Jun-07-18 17:11	Jun-07-18 17:29	Jun-07-18 17:48	Jun-07-18 18:07	Jun-07-18 18:25
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
m,p-Xylenes		<0.00400 0.00400	<0.00398 0.00398	<0.00397 0.00397	<0.00400 0.00400	<0.00398 0.00398	<0.00397 0.00397
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Jun-08-18 17:30	Jun-09-18 09:00	Jun-09-18 09:00	Jun-09-18 09:00	Jun-09-18 09:00	Jun-09-18 09:00
	<i>Analyzed:</i>	Jun-09-18 21:04	Jun-09-18 21:53	Jun-09-18 21:58	Jun-09-18 21:36	Jun-09-18 22:03	Jun-09-18 22:09
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5190 50.0	273 5.00	20200 250	111 4.99	3850 25.0	136 4.95
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Jun-06-18 16:00	Jun-06-18 16:00	Jun-06-18 16:00	Jun-06-18 16:00	Jun-06-18 16:00	Jun-06-18 16:00
	<i>Analyzed:</i>	Jun-07-18 00:25	Jun-07-18 00:45	Jun-07-18 01:06	Jun-07-18 01:26	Jun-07-18 01:46	Jun-07-18 02:07
	<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)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Diesel Range Organics (DRO)		<14.9 14.9	51.2 15.0	90.4 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Oil Range Hydrocarbons (ORO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total TPH		<14.9 14.9	51.2 15.0	90.4 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9

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.  
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Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

*Jessica Kramer*

Jessica Kramer  
Project Assistant



# Certificate of Analysis Summary 588293

LT Environmental, Inc., Arvada, CO

Project Name: PLU 213



**Project Id:** 012918114  
**Contact:** Adrian Baker  
**Project Location:** NM

**Date Received in Lab:** Wed Jun-06-18 10:45 am  
**Report Date:** 08-AUG-18  
**Project Manager:** Jessica Kramer

<b>Analysis Requested</b>	<b>Lab Id:</b>	588293-007					
	<b>Field Id:</b>	SS7					
	<b>Depth:</b>	6- In					
	<b>Matrix:</b>	SOIL					
	<b>Sampled:</b>	Jun-03-18 12:10					
<b>BTEX by EPA 8021B SUB: T104704534-17-3</b>	<b>Extracted:</b>	Jun-07-18 18:40					
	<b>Analyzed:</b>	Jun-07-18 18:43					
	<b>Units/RL:</b>	mg/kg RL					
Benzene		<0.00200 0.00200					
Toluene		<0.00200 0.00200					
Ethylbenzene		<0.00200 0.00200					
m,p-Xylenes		<0.00400 0.00400					
o-Xylene		<0.00200 0.00200					
Total Xylenes		<0.00200 0.00200					
Total BTEX		<0.00200 0.00200					
<b>Inorganic Anions by EPA 300</b>	<b>Extracted:</b>	Jun-09-18 09:00					
	<b>Analyzed:</b>	Jun-09-18 22:25					
	<b>Units/RL:</b>	mg/kg RL					
Chloride		<4.99 4.99					
<b>TPH by SW8015 Mod</b>	<b>Extracted:</b>	Jun-06-18 16:00					
	<b>Analyzed:</b>	Jun-07-18 02:28					
	<b>Units/RL:</b>	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0					
Diesel Range Organics (DRO)		<15.0 15.0					
Oil Range Hydrocarbons (ORO)		<15.0 15.0					
Total TPH		<15.0 15.0					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.  
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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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*Jessica Kramer*

Jessica Kramer  
Project Assistant



## Certificate of Analytical Results 588293

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: SS1  
Lab Sample Id: 588293-001

Matrix: Soil  
Date Collected: 06.03.18 11.40

Date Received: 06.06.18 10.45  
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: SCM

Seq Number: 3052951

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 06.08.18 17.30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5190	50.0	mg/kg	06.09.18 21.04		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3052528

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 06.06.18 16.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.07.18 00.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.07.18 00.25	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	06.07.18 00.25	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.07.18 00.25	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1-Chlorooctane	111-85-3	83	%	70-135	06.07.18 00.25		
o-Terphenyl	84-15-1	85	%	70-135	06.07.18 00.25		



# Certificate of Analytical Results 588293



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS1**  
Lab Sample Id: 588293-001

Matrix: Soil  
Date Collected: 06.03.18 11.40

Date Received: 06.06.18 10.45  
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: FOV

Analyst: FOV

Seq Number: 3053169

Prep Method: SW5030B

% Moisture:

Date Prep: 06.07.18 15.30

Basis: Wet Weight

SUB: T104704534-17-3

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.07.18 15.38	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.07.18 15.38	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.07.18 15.38	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.07.18 15.38	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.07.18 15.38	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.07.18 15.38	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.07.18 15.38	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	85	%	80-120	06.07.18 15.38		
4-Bromofluorobenzene	460-00-4	83	%	80-120	06.07.18 15.38		





## Certificate of Analytical Results 588293

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: SS2  
Lab Sample Id: 588293-002

Matrix: Soil  
Date Collected: 06.03.18 11.45

Date Received: 06.06.18 10.45  
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: SCM

Seq Number: 3052952

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 06.09.18 09.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	273	5.00	mg/kg	06.09.18 21.53		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3052528

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 06.06.18 16.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.07.18 00.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	51.2	15.0	mg/kg	06.07.18 00.45		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.07.18 00.45	U	1
Total TPH	PHC635	51.2	15.0	mg/kg	06.07.18 00.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	06.07.18 00.45	
o-Terphenyl	84-15-1	80	%	70-135	06.07.18 00.45	



## Certificate of Analytical Results 588293



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: SS2  
Lab Sample Id: 588293-002

Matrix: Soil  
Date Collected: 06.03.18 11.45

Date Received: 06.06.18 10.45  
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: FOV

% Moisture:

Analyst: FOV

Date Prep: 06.07.18 17.10

Basis: Wet Weight

Seq Number: 3053169

SUB: T104704534-17-3

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.07.18 17.11	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.07.18 17.11	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.07.18 17.11	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.07.18 17.11	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.07.18 17.11	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.07.18 17.11	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.07.18 17.11	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	94	%	80-120	06.07.18 17.11		
1,4-Difluorobenzene	540-36-3	86	%	80-120	06.07.18 17.11		



## Certificate of Analytical Results 588293

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: SS3  
Lab Sample Id: 588293-003

Matrix: Soil  
Date Collected: 06.03.18 11.50

Date Received: 06.06.18 10.45  
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: SCM

Seq Number: 3052952

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 06.09.18 09.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20200	250	mg/kg	06.09.18 21.58		50

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3052528

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 06.06.18 16.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.07.18 01.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	90.4	15.0	mg/kg	06.07.18 01.06		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.07.18 01.06	U	1
Total TPH	PHC635	90.4	15.0	mg/kg	06.07.18 01.06		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	06.07.18 01.06	
o-Terphenyl	84-15-1	100	%	70-135	06.07.18 01.06	



## Certificate of Analytical Results 588293



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: SS3  
Lab Sample Id: 588293-003

Matrix: Soil  
Date Collected: 06.03.18 11.50

Date Received: 06.06.18 10.45  
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: FOV

% Moisture:

Analyst: FOV

Date Prep: 06.07.18 17.20

Basis: Wet Weight

Seq Number: 3053169

SUB: T104704534-17-3

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.07.18 17.29	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.07.18 17.29	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.07.18 17.29	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.07.18 17.29	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.07.18 17.29	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.07.18 17.29	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.07.18 17.29	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	81	%	80-120	06.07.18 17.29		
4-Bromofluorobenzene	460-00-4	81	%	80-120	06.07.18 17.29		



# Certificate of Analytical Results 588293

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS4** Matrix: Soil Date Received: 06.06.18 10.45  
 Lab Sample Id: 588293-004 Date Collected: 06.03.18 11.55 Sample Depth: 6 In  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: OJS % Moisture:  
 Analyst: SCM Date Prep: 06.09.18 09.00 Basis: Wet Weight  
 Seq Number: 3052952

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	111	4.99	mg/kg	06.09.18 21.36		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 06.06.18 16.00 Basis: Wet Weight  
 Seq Number: 3052528

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.07.18 01.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.07.18 01.26	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.07.18 01.26	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.07.18 01.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	06.07.18 01.26	
o-Terphenyl	84-15-1	98	%	70-135	06.07.18 01.26	



## Certificate of Analytical Results 588293

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: SS4  
Lab Sample Id: 588293-004

Matrix: Soil  
Date Collected: 06.03.18 11.55

Date Received: 06.06.18 10.45  
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: FOV

% Moisture:

Analyst: FOV

Date Prep: 06.07.18 17.40

Basis: Wet Weight

Seq Number: 3053169

SUB: T104704534-17-3

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.07.18 17.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.07.18 17.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.07.18 17.48	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.07.18 17.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.07.18 17.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.07.18 17.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.07.18 17.48	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	81	%	80-120	06.07.18 17.48		
1,4-Difluorobenzene	540-36-3	82	%	80-120	06.07.18 17.48		





## Certificate of Analytical Results 588293

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: SS5  
Lab Sample Id: 588293-005

Matrix: Soil  
Date Collected: 06.03.18 12.00

Date Received: 06.06.18 10.45  
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: SCM

Seq Number: 3052952

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 06.09.18 09.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3850	25.0	mg/kg	06.09.18 22.03		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3052528

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 06.06.18 16.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.07.18 01.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.07.18 01.46	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.07.18 01.46	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.07.18 01.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	06.07.18 01.46	
o-Terphenyl	84-15-1	87	%	70-135	06.07.18 01.46	



## Certificate of Analytical Results 588293



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: SS5  
Lab Sample Id: 588293-005

Matrix: Soil  
Date Collected: 06.03.18 12.00

Date Received: 06.06.18 10.45  
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: FOV

% Moisture:

Analyst: FOV

Date Prep: 06.07.18 18.00

Basis: Wet Weight

Seq Number: 3053169

SUB: T104704534-17-3

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.07.18 18.07	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.07.18 18.07	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.07.18 18.07	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.07.18 18.07	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.07.18 18.07	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.07.18 18.07	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.07.18 18.07	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	86	%	80-120	06.07.18 18.07		
4-Bromofluorobenzene	460-00-4	82	%	80-120	06.07.18 18.07		



## Certificate of Analytical Results 588293

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: SS6  
Lab Sample Id: 588293-006

Matrix: Soil  
Date Collected: 06.03.18 12.05

Date Received: 06.06.18 10.45  
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: SCM

Seq Number: 3052952

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 06.09.18 09.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	136	4.95	mg/kg	06.09.18 22.09		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3052528

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 06.06.18 16.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.07.18 02.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.07.18 02.07	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	06.07.18 02.07	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.07.18 02.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	06.07.18 02.07	
o-Terphenyl	84-15-1	86	%	70-135	06.07.18 02.07	



## Certificate of Analytical Results 588293

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: SS6  
Lab Sample Id: 588293-006

Matrix: Soil  
Date Collected: 06.03.18 12.05

Date Received: 06.06.18 10.45  
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: FOV

% Moisture:

Analyst: FOV

Date Prep: 06.07.18 18.20

Basis: Wet Weight

Seq Number: 3053169

SUB: T104704534-17-3

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.07.18 18.25	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.07.18 18.25	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.07.18 18.25	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.07.18 18.25	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.07.18 18.25	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.07.18 18.25	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.07.18 18.25	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	80		%	80-120	06.07.18 18.25	
4-Bromofluorobenzene	460-00-4	80		%	80-120	06.07.18 18.25	



## Certificate of Analytical Results 588293

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: SS7  
Lab Sample Id: 588293-007

Matrix: Soil  
Date Collected: 06.03.18 12.10

Date Received: 06.06.18 10.45  
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: SCM

Seq Number: 3052952

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 06.09.18 09.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	06.09.18 22.25	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3052528

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 06.06.18 16.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.07.18 02.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.07.18 02.28	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.07.18 02.28	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.07.18 02.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	06.07.18 02.28	
o-Terphenyl	84-15-1	87	%	70-135	06.07.18 02.28	



## Certificate of Analytical Results 588293



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: SS7  
Lab Sample Id: 588293-007

Matrix: Soil  
Date Collected: 06.03.18 12.10

Date Received: 06.06.18 10.45  
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: FOV

% Moisture:

Analyst: FOV

Date Prep: 06.07.18 18.40

Basis: Wet Weight

Seq Number: 3053169

SUB: T104704534-17-3

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.07.18 18.43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.07.18 18.43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.07.18 18.43	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.07.18 18.43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.07.18 18.43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.07.18 18.43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.07.18 18.43	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	85	%	80-120	06.07.18 18.43		
4-Bromofluorobenzene	460-00-4	84	%	80-120	06.07.18 18.43		





## 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

**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 213

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3052951

MB Sample Id: 7656322-1-BLK

Matrix: Solid

LCS Sample Id: 7656322-1-BKS

Prep Method: E300P

Date Prep: 06.08.18

LCSD Sample Id: 7656322-1-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	274	110	272	109	90-110	1	20	mg/kg	06.09.18 18:27	

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3052952

MB Sample Id: 7656329-1-BLK

Matrix: Solid

LCS Sample Id: 7656329-1-BKS

Prep Method: E300P

Date Prep: 06.09.18

LCSD Sample Id: 7656329-1-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	275	110	275	110	90-110	0	20	mg/kg	06.09.18 21:25	

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3052951

Parent Sample Id: 588621-008

Matrix: Soil

MS Sample Id: 588621-008 S

Prep Method: E300P

Date Prep: 06.08.18

MSD Sample Id: 588621-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	588	249	813	90	862	110	90-110	6	20	mg/kg	06.09.18 19:59	

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3052951

Parent Sample Id: 588685-007

Matrix: Soil

MS Sample Id: 588685-007 S

Prep Method: E300P

Date Prep: 06.08.18

MSD Sample Id: 588685-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.97	249	273	110	275	110	90-110	1	20	mg/kg	06.09.18 18:43	

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3052952

Parent Sample Id: 588293-004

Matrix: Soil

MS Sample Id: 588293-004 S

Prep Method: E300P

Date Prep: 06.09.18

MSD Sample Id: 588293-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	111	250	381	108	366	102	90-110	4	20	mg/kg	06.09.18 21:42	

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 213

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3052952

Parent Sample Id: 588459-001

Matrix: Soil

MS Sample Id: 588459-001 S

Prep Method: E300P

Date Prep: 06.09.18

MSD Sample Id: 588459-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	59.4	250	335	110	339	112	90-110	1	20	mg/kg	06.09.18 22:57	X

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3052528

MB Sample Id: 7656149-1-BLK

Matrix: Solid

LCS Sample Id: 7656149-1-BKS

Prep Method: TX1005P

Date Prep: 06.06.18

LCSD Sample Id: 7656149-1-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	934	93	1090	109	70-135	15	20	mg/kg	06.06.18 18:16	
Diesel Range Organics (DRO)	<15.0	1000	994	99	1120	112	70-135	12	20	mg/kg	06.06.18 18:16	

## Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		122		127		70-135	%	06.06.18 18:16
o-Terphenyl	108		116		129		70-135	%	06.06.18 18:16

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3052528

Parent Sample Id: 588290-001

Matrix: Soil

MS Sample Id: 588290-001 S

Prep Method: TX1005P

Date Prep: 06.06.18

MSD Sample Id: 588290-001 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	1000	880	88	876	88	70-135	0	20	mg/kg	06.06.18 19:18	
Diesel Range Organics (DRO)	<15.0	1000	943	94	933	93	70-135	1	20	mg/kg	06.06.18 19:18	

## Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		105		70-135	%	06.06.18 19:18
o-Terphenyl	94		93		70-135	%	06.06.18 19:18

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 213

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3053169

MB Sample Id: 7656514-1-BLK

Matrix: Solid

LCS Sample Id: 7656514-1-BKS

Prep Method: SW5030B

Date Prep: 06.07.18

LCSD Sample Id: 7656514-1-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	0.0867	87	0.0910	91	70-130	5	35	mg/kg	06.07.18 14:04	
Toluene	<0.00199	0.0994	0.0925	93	0.0969	97	70-130	5	35	mg/kg	06.07.18 14:04	
Ethylbenzene	<0.00199	0.0994	0.0929	93	0.0989	99	71-129	6	35	mg/kg	06.07.18 14:04	
m,p-Xylenes	<0.00398	0.199	0.199	100	0.216	108	70-135	8	35	mg/kg	06.07.18 14:04	
o-Xylene	<0.00199	0.0994	0.0946	95	0.108	108	71-133	13	35	mg/kg	06.07.18 14:04	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	80		100		103		80-120	%	06.07.18 14:04
4-Bromofluorobenzene	84		80		91		80-120	%	06.07.18 14:04

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3053169

Parent Sample Id: 588293-001

Matrix: Soil

MS Sample Id: 588293-001 S

Prep Method: SW5030B

Date Prep: 06.07.18

MSD Sample Id: 588293-001 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	0.0855	86	0.0881	89	70-130	3	35	mg/kg	06.07.18 16:09	
Toluene	<0.00199	0.0996	0.0922	93	0.0952	96	70-130	3	35	mg/kg	06.07.18 16:09	
Ethylbenzene	<0.00199	0.0996	0.0970	97	0.0994	100	71-129	2	35	mg/kg	06.07.18 16:09	
m,p-Xylenes	<0.00398	0.199	0.211	106	0.215	109	70-135	2	35	mg/kg	06.07.18 16:09	
o-Xylene	<0.00199	0.0996	0.106	106	0.112	113	71-133	6	35	mg/kg	06.07.18 16:09	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		103		80-120	%	06.07.18 16:09
4-Bromofluorobenzene	104		116		80-120	%	06.07.18 16:09

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



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Stafford, Texas (281-240-4200)  
Dallas Texas (214-902-0300)

San Antonio, Texas (210-509-3334)  
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenco.com

# CHAIN OF CUSTODY

Page 1 of 1

Xenco Quote # 588293

Xenco Job #

Matrix Codes

W = Water

S = Soil/Sed/Solid

GW = Ground Water

DW = Drinking Water

P = Product

SW = Surface water

SL = Sludge

OW = Ocean/Sea Water

WI = Wipe

O = Oil

WW = Waste Water

A = Air

## Project Information

Project Name/Number: P4413 / 010918114

Project Location: NM

Invoice To: XTO Energy - Kyle Little

PO Number: 38P-4745

Abaker@L.TENV.com (432) 704-5178

Adrian Baker

Samplers Name

Field ID / Point of Collection

Sample Depth

Date

Time

Matrix

# of bottles

HCl

NaOH/Zn Acetate

HNO3

H2SO4

NaOH

NaHSO4

MEOH

NONE

Number of preserved bottles

Notes:

Turnaround Time (Business days)

Same Day TAT

5 Day TAT

Next Day EMERGENCY

7 Day TAT

2 Day EMERGENCY

Contract TAT

3 Day EMERGENCY

TRRP Checklist

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

Relinquished by Sampler:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

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 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 each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.





## Inter-Office Shipment

Page 1 of 1

IOS Number **108387**

Date/Time: 06/06/18 12:03

Created by: Shawnee Smith

Please send report to: Jessica Kramer

Lab# From: **Midland**

Delivery Priority:

Address: 1211 W. Florida Ave, Midland TX 79701

Lab# To: **San Antonio**

Air Bill No.:

Phone:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
588293-001	S	SS1	06/04/18 11:40	SW8021B	BTEX by EPA 8021B	06/12/18	06/18/18	JKR	BR4FBZ BZ BZME EBZ X	
588293-002	S	SS2	06/04/18 11:45	SW8021B	BTEX by EPA 8021B	06/12/18	06/18/18	JKR	BR4FBZ BZ BZME EBZ X	
588293-003	S	SS3	06/04/18 11:50	SW8021B	BTEX by EPA 8021B	06/12/18	06/18/18	JKR	BR4FBZ BZ BZME EBZ X	
588293-004	S	SS4	06/04/18 11:55	SW8021B	BTEX by EPA 8021B	06/12/18	06/18/18	JKR	BR4FBZ BZ BZME EBZ X	
588293-005	S	SS5	06/04/18 12:00	SW8021B	BTEX by EPA 8021B	06/12/18	06/18/18	JKR	BR4FBZ BZ BZME EBZ X	
588293-006	S	SS6	06/04/18 12:05	SW8021B	BTEX by EPA 8021B	06/12/18	06/18/18	JKR	BR4FBZ BZ BZME EBZ X	
588293-007	S	SS7	06/04/18 12:10	SW8021B	BTEX by EPA 8021B	06/12/18	06/18/18	JKR	BR4FBZ BZ BZME EBZ X	

## Inter Office Shipment or Sample Comments:

Relinquished By

Shawnee Smith

Received By:

Felipe Ovalle

Date Relinquished: 06/06/2018Date Received: 06/07/2018 09:48Cooler Temperature: 1.9





## Inter Office Report- Sample Receipt Checklist

Sent To: San Antonio

IOS #: 108387

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : SAT4 CF:-0.1

Sent By: Shawnee Smith

Date Sent: 06/06/2018 12:03 PM

Received By: Felipe Ovalle

Date Received: 06/07/2018 09:48 AM

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	1.9	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received with appropriate temperature?	Yes	Initial Temp: 2.0 CF:-0.1 Final Temp: 1.9
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#5 *Custody Seals Signed and dated for Containers/coolers	Yes	
#6 *IOS present?	Yes	
#7 Any missing/extra samples?	No	
#8 IOS agrees with sample label(s)/matrix?	Yes	
#9 Sample matrix/ properties agree with IOS?	Yes	
#10 Samples in proper container/ bottle?	Yes	
#11 Samples properly preserved?	Yes	
#12 Sample container(s) intact?	Yes	
#13 Sufficient sample amount for indicated test(s)?	Yes	
#14 All samples received within hold time?	Yes	

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

NonConformance:

Corrective Action Taken:

## Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by : \_\_\_\_\_ Date: \_\_\_\_\_

Checklist reviewed by:

Felipe Ovalle

Date: 06/07/2018

# Analytical Report 599705

for  
**LT Environmental, Inc.**

**Project Manager: Adrian Baker**

**PLU 213**

**27-SEP-18**

Collected By: Client



**1211 W. Florida Ave, Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):  
Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):  
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)  
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)  
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)  
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)  
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)  
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)  
Xenco-Atlanta (LELAP Lab ID #04176)  
Xenco-Tampa: Florida (E87429)  
Xenco-Lakeland: Florida (E84098)



27-SEP-18

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

Reference: XENCO Report No(s): **599705**  
**PLU 213**  
Project Address: Carlsbad, 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) 599705. 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. 599705 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 599705

LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS06	S	09-18-18 10:05	2 ft	599705-001
SS07	S	09-18-18 10:30	2 ft	599705-002



## CASE NARRATIVE

**Client Name:** LT Environmental, Inc.

**Project Name:** PLU 213

Project ID:

Work Order Number(s): 599705

Report Date: 27-SEP-18

Date Received: 09/20/2018

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**Sample receipt non conformances and comments:**

None

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**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3064170 BTEX by EPA 8021B

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



# Certificate of Analysis Summary 599705

LT Environmental, Inc., Arvada, CO

Project Name: PLU 213



Project Id:

Contact: Adrian Baker

Project Location: Carslbad, NM

Date Received in Lab: Thu Sep-20-18 10:53 am

Report Date: 27-SEP-18

Project Manager: Jessica Kramer

<b>Analysis Requested</b>	<b>Lab Id:</b>	599705-001	599705-002				
	<b>Field Id:</b>	SS06	SS07				
	<b>Depth:</b>	2- ft	2- ft				
	<b>Matrix:</b>	SOIL	SOIL				
	<b>Sampled:</b>	Sep-18-18 10:05	Sep-18-18 10:30				
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Sep-22-18 09:30	Sep-22-18 09:30				
	<b>Analyzed:</b>	Sep-23-18 07:17	Sep-23-18 07:37				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Benzene		<0.00199	0.00199	<0.00199	0.00199		
Toluene		<0.00199	0.00199	<0.00199	0.00199		
Ethylbenzene		<0.00199	0.00199	<0.00199	0.00199		
m,p-Xylenes		<0.00398	0.00398	<0.00398	0.00398		
o-Xylene		<0.00199	0.00199	<0.00199	0.00199		
Total Xylenes		<0.00199	0.00199	<0.00199	0.00199		
Total BTEX		<0.00199	0.00199	<0.00199	0.00199		
<b>Inorganic Anions by EPA 300</b>	<b>Extracted:</b>	Sep-24-18 10:00	Sep-24-18 10:00				
	<b>Analyzed:</b>	Sep-24-18 20:22	Sep-24-18 20:28				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Chloride		187	1.98	20.4	1.99		
<b>TPH by SW8015 Mod</b>	<b>Extracted:</b>	Sep-21-18 16:00	Sep-21-18 14:00				
	<b>Analyzed:</b>	Sep-22-18 00:54	Sep-22-18 01:34				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9	<15.0	15.0		
Diesel Range Organics (DRO)		51.0	14.9	261	15.0		
Motor Oil Range Hydrocarbons (MRO)		<14.9	14.9	<15.0	15.0		
Total TPH		51.0	14.9	261	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

Version: 1.9%

*Jessica Kramer*

Jessica Kramer  
Project Assistant





# Certificate of Analytical Results 599705

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS06** Matrix: Soil Date Received: 09.20.18 10.53  
 Lab Sample Id: 599705-001 Date Collected: 09.18.18 10.05 Sample Depth: 2 ft  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 09.24.18 10.00 Basis: Wet Weight  
 Seq Number: 3064310

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	187	1.98	mg/kg	09.24.18 20.22		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 09.21.18 16.00 Basis: Wet Weight  
 Seq Number: 3064207

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.22.18 00.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	51.0	14.9	mg/kg	09.22.18 00.54		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.22.18 00.54	U	1
Total TPH	PHC635	51.0	14.9	mg/kg	09.22.18 00.54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	09.22.18 00.54	
o-Terphenyl	84-15-1	102	%	70-135	09.22.18 00.54	



# Certificate of Analytical Results 599705



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS06**  
 Lab Sample Id: 599705-001

Matrix: Soil  
 Date Collected: 09.18.18 10.05

Date Received: 09.20.18 10.53  
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.22.18 09.30

Basis: Wet Weight

Seq Number: 3064170

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.23.18 07.17	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.23.18 07.17	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.23.18 07.17	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.23.18 07.17	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.23.18 07.17	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.23.18 07.17	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.23.18 07.17	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.23.18 07.17		
4-Bromofluorobenzene	460-00-4	127	%	70-130	09.23.18 07.17		



# Certificate of Analytical Results 599705

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS07** Matrix: Soil Date Received: 09.20.18 10.53  
 Lab Sample Id: 599705-002 Date Collected: 09.18.18 10.30 Sample Depth: 2 ft  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 09.24.18 10.00 Basis: Wet Weight  
 Seq Number: 3064310

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.4	1.99	mg/kg	09.24.18 20.28		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 09.21.18 14.00 Basis: Wet Weight  
 Seq Number: 3064205

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.22.18 01.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	261	15.0	mg/kg	09.22.18 01.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.22.18 01.34	U	1
Total TPH	PHC635	261	15.0	mg/kg	09.22.18 01.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	09.22.18 01.34	
o-Terphenyl	84-15-1	112	%	70-135	09.22.18 01.34	



# Certificate of Analytical Results 599705

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS07**  
 Lab Sample Id: 599705-002

Matrix: Soil  
 Date Collected: 09.18.18 10.30

Date Received: 09.20.18 10.53  
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.22.18 09.30

Basis: Wet Weight

Seq Number: 3064170

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.23.18 07.37	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.23.18 07.37	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.23.18 07.37	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.23.18 07.37	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.23.18 07.37	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.23.18 07.37	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.23.18 07.37	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	87	%	70-130	09.23.18 07.37		
4-Bromofluorobenzene	460-00-4	113	%	70-130	09.23.18 07.37		



## 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

**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 213

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064310

MB Sample Id: 7662884-1-BLK

Matrix: Solid

LCS Sample Id: 7662884-1-BKS

Prep Method: E300P

Date Prep: 09.24.18

LCSD Sample Id: 7662884-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<2.00	100	105	105	104	104	90-110	1	20	mg/kg	09.24.18 19:48	

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064310

Parent Sample Id: 599704-004

Matrix: Soil

MS Sample Id: 599704-004 S

Prep Method: E300P

Date Prep: 09.24.18

MSD Sample Id: 599704-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	16.1	99.2	118	103	118	103	90-110	0	20	mg/kg	09.24.18 20:05	

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064310

Parent Sample Id: 599709-004

Matrix: Soil

MS Sample Id: 599709-004 S

Prep Method: E300P

Date Prep: 09.24.18

MSD Sample Id: 599709-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	452	99.6	531	79	533	81	90-110	0	20	mg/kg	09.24.18 21:25	X

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3064205

MB Sample Id: 7662829-1-BLK

Matrix: Solid

LCS Sample Id: 7662829-1-BKS

Prep Method: TX1005P

Date Prep: 09.21.18

LCSD Sample Id: 7662829-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	983	98	929	93	70-135	6	20	mg/kg	09.21.18 11:21	
Diesel Range Organics (DRO)	<8.13	1000	970	97	914	91	70-135	6	20	mg/kg	09.21.18 11:21	

## Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		127		118		70-135	%	09.21.18 11:21
o-Terphenyl	112		115		104		70-135	%	09.21.18 11:21

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





## LT Environmental, Inc.

PLU 213

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3064207

MB Sample Id: 7662832-1-BLK

Matrix: Solid

LCS Sample Id: 7662832-1-BKS

Prep Method: TX1005P

Date Prep: 09.21.18

LCSD Sample Id: 7662832-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	935	94	982	98	70-135	5	20	mg/kg	09.21.18 16:37	
Diesel Range Organics (DRO)	<8.13	1000	924	92	986	99	70-135	6	20	mg/kg	09.21.18 16:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		123		126		70-135	%	09.21.18 16:37
o-Terphenyl	113		106		115		70-135	%	09.21.18 16:37

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3064205

Parent Sample Id: 599389-001

Matrix: Soil

MS Sample Id: 599389-001 S

Prep Method: TX1005P

Date Prep: 09.21.18

MSD Sample Id: 599389-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.98	997	938	94	951	95	70-135	1	20	mg/kg	09.21.18 12:20	
Diesel Range Organics (DRO)	<8.10	997	960	96	977	98	70-135	2	20	mg/kg	09.21.18 12:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		124		70-135	%	09.21.18 12:20
o-Terphenyl	115		108		70-135	%	09.21.18 12:20

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3064207

Parent Sample Id: 599709-002

Matrix: Soil

MS Sample Id: 599709-002 S

Prep Method: TX1005P

Date Prep: 09.21.18

MSD Sample Id: 599709-002 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)	<7.99	998	907	91	917	92	70-135	1	20	mg/kg	09.21.18 17:56	
Diesel Range Organics (DRO)	<8.11	998	904	91	910	91	70-135	1	20	mg/kg	09.21.18 17:56	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		116		70-135	%	09.21.18 17:56
o-Terphenyl	105		104		70-135	%	09.21.18 17:56

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 213

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3064170

MB Sample Id: 7662857-1-BLK

Matrix: Solid

LCS Sample Id: 7662857-1-BKS

Prep Method: SW5030B

Date Prep: 09.22.18

LCSD Sample Id: 7662857-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.105	105	0.116	115	70-130	10	35	mg/kg	09.23.18 00:50	
Toluene	<0.00200	0.100	0.114	114	0.115	114	70-130	1	35	mg/kg	09.23.18 00:50	
Ethylbenzene	<0.00200	0.100	0.105	105	0.105	104	70-130	0	35	mg/kg	09.23.18 00:50	
m,p-Xylenes	<0.00401	0.200	0.212	106	0.212	105	70-130	0	35	mg/kg	09.23.18 00:50	
o-Xylene	<0.00200	0.100	0.105	105	0.104	103	70-130	1	35	mg/kg	09.23.18 00:50	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		93		101		70-130	%	09.23.18 00:50
4-Bromofluorobenzene	108		93		93		70-130	%	09.23.18 00:50

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3064170

Parent Sample Id: 599548-001

Matrix: Soil

MS Sample Id: 599548-001 S

Prep Method: SW5030B

Date Prep: 09.22.18

MSD Sample Id: 599548-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00211	0.106	0.0428	40	0.0512	9	70-130	18	35	mg/kg	09.23.18 01:30	X
Toluene	<0.00211	0.106	0.0163	15	0.00567	1	70-130	97	35	mg/kg	09.23.18 01:30	XF
Ethylbenzene	<0.00211	0.106	0.00814	8	0.00400	1	70-130	68	35	mg/kg	09.23.18 01:30	XF
m,p-Xylenes	<0.00422	0.211	0.0164	8	0.0151	1	70-130	8	35	mg/kg	09.23.18 01:30	X
o-Xylene	<0.00211	0.106	0.00818	8	0.0149	3	70-130	58	35	mg/kg	09.23.18 01:30	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		99		70-130	%	09.23.18 01:30
4-Bromofluorobenzene	103		121		70-130	%	09.23.18 01:30

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



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

## CHAIN OF CUSTODY

Page 1 of 1

**San Antonio, Texas (210-509-3334)**  
**Midland, Texas (432-704-5251)**

**Phoenix, Arizona (480-355-0900)**

[www.xenco.com](http://www.xenco.com)

<b>Client / Reporting Information</b>						<b>Project Information</b>						<b>Analytical Information</b>						<b>Matrix Codes</b>					
Company Name / Branch: LT Environmental, Inc. - Permian Office						Project Name/Number: PLV 213												W = Water S = Soil/Sed/Solid GW = Ground Water DW = Drinking Water P = Product SW = Surface water SL = Sludge OW = Ocean/Sea Water WI = Wipe O = Oil WW = Waste Water A = Air					
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705						Project Location: Carlsbad, NM																	
Email: Abakeer@ltenv.com Adrian Baker						Phone No: (432) 704-5178						Invoice To: XTO Energy - Kyle Littlell											
Sampler's Name <i>Gan Bain</i>						PO Number: ZRP-3130																	
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	CI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX EPA 8020 TPH EPA 8015 Chlorides 300.1								
1		SSOG	2'	9/18/18	1005	5	1								X								
2		SSOT	2'		1030										X								
3															X								
4															X								
5															X								
6															X								
7															X								
8															X								
9															X								
10															X								
Turnaround Time (Business days)																Notes:							
<input type="checkbox"/> Same Day TAT		<input checked="" type="checkbox"/> 6 Day TAT		<input type="checkbox"/> Level II Std QC		<input type="checkbox"/> Level IV (Full Data Pkg raw data)																	
<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																	
<input type="checkbox"/> 2 Day EMERGENCY		<input type="checkbox"/> Contract TAT		<input type="checkbox"/> Level 3 (CLP Forms)		<input type="checkbox"/> UST / RG 411																	
<input type="checkbox"/> 3 Day EMERGENCY				<input type="checkbox"/> TRRP Checklist																			
TAT Starts Day received by Lab, if received by 5:00 pm																							
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLE CHANGE POSSESSION ACCORDING COURIER DELIVERY																							
Relinquished by Sampler:				Date Time: 9/18/18 1705				Received By: [Signature]				Date Time: 09/19/18 15:36				Received By: [Signature]							
Relinquished by:				Date Time:				Received By:				Date Time:				Received By:							
Relinquished by:				Date Time:				Received By:				Date Time:				Received By:							
Custody Seal #				Preserved where applicable				On Ice				Cooler Temp.				Thermo. Corr. Factor							

Service. Xencro, its affiliates and subcontractors, its assigns standard terms and conditions of service. Xencro will be liable only for the cost of samples and shall not assume any responsibility for an analysis of samples. Xencro's liability will be limited to the cost of samples. Any samples received by Xencro but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

ORIGIN ID:CAOA (575) 887-6245 XENCO PAC N MAIL 910 W PIERCE ST CARLSBAD, NM 88220 UNITED STATES US		SHIP DATE: 19SEP18 ACTWGT: 49.00 LB CAD: 101813706/NET4040 DIMS: 24x16x16 IN BILL RECIPIENT	
TO HOLD FOR XENCO FEDEX EXPRESS SHIP CENTER FEDEX SHIP CENTER 3600 COUNTY RD 1276 S MIDLAND TX 79711 (806) 794-1296 REF:			
PO:		DEPT:	
			
			
552J1F78C/DCA5			
TRK# 7732 7701 1476 0201		THU - 20 SEP HOLD STANDARD OVERNIGHT	
41 MAFA TX-US LBB		HLD MAFA LBB	
			

**After printing this label:**

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

**Warning:** Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on [fedex.com](http://fedex.com). FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



Client: LT Environmental, Inc.

Date/ Time Received: 09/20/2018 10:53:00 AM

Work Order #: 599705

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

## Sample Receipt Checklist

## Comments

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

Katie Lowe

Date: 09/20/2018

Checklist reviewed by:

Jessica Kramer

Date: 09/20/2018

# Analytical Report 599986

for  
**LT Environmental, Inc.**

**Project Manager: Adrian Baker**

**PLU 213**

**01-OCT-18**

Collected By: Client



**1211 W. Florida Ave, Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):  
Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):  
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)  
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)  
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)  
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)  
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)  
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)  
Xenco-Atlanta (LELAP Lab ID #04176)  
Xenco-Tampa: Florida (E87429)  
Xenco-Lakeland: Florida (E84098)





01-OCT-18

Project Manager: **Adrian Baker**

**LT Environmental, Inc.**

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **599986**

**PLU 213**

Project Address: Carlsbad, 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) 599986. 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. 599986 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.*

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## Sample Cross Reference 599986

LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS08	S	09-20-18 10:20	2 ft	599986-001
SS09	S	09-20-18 10:25	1.5 ft	599986-002
SS10	S	09-20-18 10:30	1.5 ft	599986-003
FS01	S	09-20-18 10:40	3.5 ft	599986-004
SS11	S	09-20-18 10:50	6 In	599986-005
SS12	S	09-20-18 10:55	6 In	599986-006
SS13	S	09-20-18 11:00	1.5 ft	599986-007
SS14	S	09-20-18 11:05	2 ft	599986-008
SS15	S	09-20-18 11:10	1.5 ft	599986-009
SS16	S	09-20-18 11:20	1.5 ft	599986-010
SS17	S	09-20-18 11:25	1.5 ft	599986-011
SS18	S	09-20-18 11:30	1.5 ft	599986-012
SS19	S	09-20-18 12:30	6 In	599986-013



## CASE NARRATIVE

**Client Name: LT Environmental, Inc.**

**Project Name: PLU 213**

Project ID:

Work Order Number(s): 599986

Report Date: 01-OCT-18

Date Received: 09/22/2018

---

**Sample receipt non conformances and comments:**

None

---

**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3064409 BTEX by EPA 8021B

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

Batch: LBA-3064696 BTEX by EPA 8021B

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

Batch: LBA-3064869 BTEX by EPA 8021B

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



# Certificate of Analysis Summary 599986

LT Environmental, Inc., Arvada, CO

Project Name: PLU 213

Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Sat Sep-22-18 09:00 am

Report Date: 01-OCT-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	599986-001		599986-002		599986-003		599986-004		599986-005		599986-006	
	<i>Field Id:</i>	SS08		SS09		SS10		FS01		SS11		SS12	
	<i>Depth:</i>	2- ft		1.5- ft		1.5- ft		3.5- ft		6- In		6- In	
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	<i>Sampled:</i>	Sep-20-18 10:20		Sep-20-18 10:25		Sep-20-18 10:30		Sep-20-18 10:40		Sep-20-18 10:50		Sep-20-18 10:55	
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Sep-27-18 11:45		Sep-27-18 11:45		Sep-28-18 15:00		Sep-28-18 15:00		Sep-28-18 15:00		Sep-28-18 15:00	
	<i>Analyzed:</i>	Sep-27-18 22:26		Sep-27-18 22:47		Sep-28-18 23:28		Sep-28-18 23:50		Sep-29-18 00:11		Sep-29-18 00:32	
	<i>Units/RL:</i>	mg/kg RL		mg/kg RL		mg/kg RL		mg/kg RL		mg/kg RL		mg/kg RL	
Benzene		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202
Toluene		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202
Ethylbenzene		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202
m,p-Xylenes		<0.00397	0.00397	<0.00398	0.00398	<0.00399	0.00399	<0.00403	0.00403	<0.00401	0.00401	<0.00403	0.00403
o-Xylene		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202
Total Xylenes		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202
Total BTEX		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Sep-25-18 13:00		Sep-25-18 16:00		Sep-25-18 13:00		Sep-25-18 13:00		Sep-25-18 13:00		Sep-25-18 13:00	
	<i>Analyzed:</i>	Sep-25-18 16:43		Sep-25-18 20:11		Sep-25-18 17:00		Sep-25-18 17:06		Sep-25-18 17:12		Sep-25-18 17:18	
	<i>Units/RL:</i>	mg/kg RL		mg/kg RL		mg/kg RL		mg/kg RL		mg/kg RL		mg/kg RL	
Chloride		229	5.00	26.8	5.00	463	5.00	292	5.00	557	5.00	429	5.00
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Sep-24-18 14:00		Sep-24-18 14:00		Sep-24-18 14:00		Sep-24-18 14:00		Sep-24-18 14:00		Sep-24-18 14:00	
	<i>Analyzed:</i>	Sep-25-18 01:13		Sep-25-18 01:32		Sep-25-18 08:59		Sep-25-18 09:18		Sep-25-18 09:36		Sep-25-18 09:55	
	<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)		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer  
Project Assistant



# Certificate of Analysis Summary 599986

LT Environmental, Inc., Arvada, CO

Project Name: PLU 213

Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Sat Sep-22-18 09:00 am

Report Date: 01-OCT-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	599986-007	599986-008	599986-009	599986-010	599986-011	599986-012
	<i>Field Id:</i>	SS13	SS14	SS15	SS16	SS17	SS18
	<i>Depth:</i>	1.5- ft	2- ft	1.5- ft	1.5- ft	1.5- ft	1.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-20-18 11:00	Sep-20-18 11:05	Sep-20-18 11:10	Sep-20-18 11:20	Sep-20-18 11:25	Sep-20-18 11:30
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Sep-25-18 09:30	Sep-28-18 15:00	Sep-28-18 15:00	Sep-28-18 15:00	Sep-28-18 15:00	Sep-28-18 15:00
	<i>Analyzed:</i>	Sep-25-18 18:54	Sep-29-18 00:53	Sep-29-18 02:17	Sep-29-18 02:39	Sep-29-18 03:00	Sep-29-18 03:21
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198
Toluene		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198
Ethylbenzene		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198
m,p-Xylenes		<0.00404 0.00404	<0.00398 0.00398	<0.00399 0.00399	<0.00404 0.00404	<0.00404 0.00404	<0.00397 0.00397
o-Xylene		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198
Total Xylenes		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198
Total BTEX		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Sep-25-18 13:00	Sep-25-18 13:00	Sep-25-18 13:00	Sep-25-18 13:00	Sep-25-18 13:00	Sep-25-18 13:00
	<i>Analyzed:</i>	Sep-25-18 17:55	Sep-25-18 18:00	Sep-25-18 18:06	Sep-25-18 18:12	Sep-25-18 18:18	Sep-25-18 18:23
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		17.0 4.97	528 4.95	114 5.00	478 4.99	142 5.00	287 5.00
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Sep-24-18 14:00	Sep-24-18 14:00	Sep-24-18 14:00	Sep-24-18 14:00	Sep-24-18 14:00	Sep-24-18 14:00
	<i>Analyzed:</i>	Sep-25-18 10:13	Sep-25-18 10:32	Sep-25-18 10:51	Sep-25-18 11:09	Sep-25-18 14:34	Sep-25-18 12:23
	<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)		<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		149 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		33.1 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		182 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Jessica Kramer  
Project Assistant



# Certificate of Analysis Summary 599986

LT Environmental, Inc., Arvada, CO

Project Name: PLU 213

**Project Id:**

**Contact:** Adrian Baker

**Project Location:** Carlsbad, NM

**Date Received in Lab:** Sat Sep-22-18 09:00 am

**Report Date:** 01-OCT-18

**Project Manager:** Jessica Kramer

<b>Analysis Requested</b>	<b>Lab Id:</b>	599986-013					
	<b>Field Id:</b>	SS19					
	<b>Depth:</b>	6- In					
	<b>Matrix:</b>	SOIL					
	<b>Sampled:</b>	Sep-20-18 12:30					
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Sep-28-18 15:00					
	<b>Analyzed:</b>	Sep-29-18 03:42					
	<b>Units/RL:</b>	mg/kg RL					
	Benzene	<0.00200 0.00200					
	Toluene	<0.00200 0.00200					
	Ethylbenzene	<0.00200 0.00200					
	m,p-Xylenes	<0.00400 0.00400					
	o-Xylene	<0.00200 0.00200					
	Total Xylenes	<0.00200 0.00200					
	Total BTEX	<0.00200 0.00200					
<b>Inorganic Anions by EPA 300</b>	<b>Extracted:</b>	Sep-25-18 13:00					
	<b>Analyzed:</b>	Sep-25-18 18:40					
	<b>Units/RL:</b>	mg/kg RL					
	Chloride	<5.00 5.00					
<b>TPH by SW8015 Mod</b>	<b>Extracted:</b>	Sep-24-18 14:00					
	<b>Analyzed:</b>	Sep-25-18 12:42					
	<b>Units/RL:</b>	mg/kg RL					
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0					
	Diesel Range Organics (DRO)	<15.0 15.0					
	Motor Oil Range Hydrocarbons (MRO)	<15.0 15.0					
	Total TPH	<15.0 15.0					

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

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Jessica Kramer  
Project Assistant



# Certificate of Analytical Results 599986



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS08** Matrix: Soil Date Received: 09.22.18 09.00  
 Lab Sample Id: 599986-001 Date Collected: 09.20.18 10.20 Sample Depth: 2 ft  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 09.25.18 13.00 Basis: Wet Weight  
 Seq Number: 3064431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	229	5.00	mg/kg	09.25.18 16.43		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 09.24.18 14.00 Basis: Wet Weight  
 Seq Number: 3064381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.25.18 01.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.25.18 01.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.25.18 01.13	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.25.18 01.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	09.25.18 01.13	
o-Terphenyl	84-15-1	103	%	70-135	09.25.18 01.13	



# Certificate of Analytical Results 599986



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS08**  
Lab Sample Id: 599986-001

Matrix: Soil  
Date Collected: 09.20.18 10.20

Date Received: 09.22.18 09.00  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.27.18 11.45

Basis: Wet Weight

Seq Number: 3064696

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	09.27.18 22.26	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.27.18 22.26	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.27.18 22.26	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	09.27.18 22.26	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	09.27.18 22.26	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	09.27.18 22.26	U	1
Total BTEX		<0.00198	0.00198	mg/kg	09.27.18 22.26	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	97	%	70-130	09.27.18 22.26		
1,4-Difluorobenzene	540-36-3	110	%	70-130	09.27.18 22.26		





# Certificate of Analytical Results 599986



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS09** Matrix: Soil Date Received: 09.22.18 09.00  
 Lab Sample Id: 599986-002 Date Collected: 09.20.18 10.25 Sample Depth: 1.5 ft  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 09.25.18 16.00 Basis: Wet Weight  
 Seq Number: 3064441

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	26.8	5.00	mg/kg	09.25.18 20.11		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 09.24.18 14.00 Basis: Wet Weight  
 Seq Number: 3064381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.25.18 01.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.25.18 01.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.25.18 01.32	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.25.18 01.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	09.25.18 01.32	
o-Terphenyl	84-15-1	102	%	70-135	09.25.18 01.32	



# Certificate of Analytical Results 599986



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS09**  
Lab Sample Id: 599986-002

Matrix: Soil  
Date Collected: 09.20.18 10.25

Date Received: 09.22.18 09.00  
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064696

Prep Method: SW5030B

% Moisture:

Date Prep: 09.27.18 11.45

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.27.18 22.47	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.27.18 22.47	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.27.18 22.47	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.27.18 22.47	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.27.18 22.47	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.27.18 22.47	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.27.18 22.47	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	110	%	70-130	09.27.18 22.47		
4-Bromofluorobenzene	460-00-4	100	%	70-130	09.27.18 22.47		



# Certificate of Analytical Results 599986

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS10** Matrix: Soil Date Received: 09.22.18 09.00  
 Lab Sample Id: 599986-003 Date Collected: 09.20.18 10.30 Sample Depth: 1.5 ft  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 09.25.18 13.00 Basis: Wet Weight  
 Seq Number: 3064431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	463	5.00	mg/kg	09.25.18 17.00		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 09.24.18 14.00 Basis: Wet Weight  
 Seq Number: 3064381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.25.18 08.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.25.18 08.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.25.18 08.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.25.18 08.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	09.25.18 08.59	
o-Terphenyl	84-15-1	102	%	70-135	09.25.18 08.59	



# Certificate of Analytical Results 599986

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS10**  
 Lab Sample Id: 599986-003

Matrix: Soil  
 Date Collected: 09.20.18 10.30

Date Received: 09.22.18 09.00  
 Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064869

Date Prep: 09.28.18 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.28.18 23.28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.28.18 23.28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.28.18 23.28	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.28.18 23.28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.28.18 23.28	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.28.18 23.28	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.28.18 23.28	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	102	%	70-130	09.28.18 23.28		
1,4-Difluorobenzene	540-36-3	112	%	70-130	09.28.18 23.28		



# Certificate of Analytical Results 599986

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **FS01** Matrix: Soil Date Received: 09.22.18 09.00  
 Lab Sample Id: 599986-004 Date Collected: 09.20.18 10.40 Sample Depth: 3.5 ft  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 09.25.18 13.00 Basis: Wet Weight  
 Seq Number: 3064431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	292	5.00	mg/kg	09.25.18 17.06		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 09.24.18 14.00 Basis: Wet Weight  
 Seq Number: 3064381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.25.18 09.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.25.18 09.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.25.18 09.18	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.25.18 09.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	09.25.18 09.18	
o-Terphenyl	84-15-1	103	%	70-135	09.25.18 09.18	



# Certificate of Analytical Results 599986



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **FS01**  
Lab Sample Id: 599986-004

Matrix: Soil  
Date Collected: 09.20.18 10.40

Date Received: 09.22.18 09.00  
Sample Depth: 3.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064869

Date Prep: 09.28.18 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.28.18 23.50	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.28.18 23.50	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.28.18 23.50	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	09.28.18 23.50	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.28.18 23.50	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.28.18 23.50	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.28.18 23.50	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	112	%	70-130	09.28.18 23.50		
4-Bromofluorobenzene	460-00-4	102	%	70-130	09.28.18 23.50		



# Certificate of Analytical Results 599986



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS11** Matrix: Soil Date Received: 09.22.18 09.00  
 Lab Sample Id: 599986-005 Date Collected: 09.20.18 10.50 Sample Depth: 6 In  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 09.25.18 13.00 Basis: Wet Weight  
 Seq Number: 3064431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	557	5.00	mg/kg	09.25.18 17.12		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 09.24.18 14.00 Basis: Wet Weight  
 Seq Number: 3064381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.25.18 09.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.25.18 09.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.25.18 09.36	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.25.18 09.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	09.25.18 09.36	
o-Terphenyl	84-15-1	95	%	70-135	09.25.18 09.36	





# Certificate of Analytical Results 599986



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS11**  
Lab Sample Id: 599986-005

Matrix: Soil  
Date Collected: 09.20.18 10.50

Date Received: 09.22.18 09.00  
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.28.18 15.00

Basis: Wet Weight

Seq Number: 3064869

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.29.18 00.11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.29.18 00.11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.29.18 00.11	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.29.18 00.11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.29.18 00.11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.29.18 00.11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.29.18 00.11	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	121	%	70-130	09.29.18 00.11		
4-Bromofluorobenzene	460-00-4	118	%	70-130	09.29.18 00.11		



# Certificate of Analytical Results 599986

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS12** Matrix: Soil Date Received: 09.22.18 09.00  
 Lab Sample Id: 599986-006 Date Collected: 09.20.18 10.55 Sample Depth: 6 In  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 09.25.18 13.00 Basis: Wet Weight  
 Seq Number: 3064431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	429	5.00	mg/kg	09.25.18 17.18		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 09.24.18 14.00 Basis: Wet Weight  
 Seq Number: 3064381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.25.18 09.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.25.18 09.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.25.18 09.55	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.25.18 09.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	09.25.18 09.55	
o-Terphenyl	84-15-1	100	%	70-135	09.25.18 09.55	



# Certificate of Analytical Results 599986

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS12**  
 Lab Sample Id: 599986-006

Matrix: Soil  
 Date Collected: 09.20.18 10.55

Date Received: 09.22.18 09.00  
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.28.18 15.00

Basis: Wet Weight

Seq Number: 3064869

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.29.18 00.32	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.29.18 00.32	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.29.18 00.32	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	09.29.18 00.32	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.29.18 00.32	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.29.18 00.32	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.29.18 00.32	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	102	%	70-130	09.29.18 00.32		
1,4-Difluorobenzene	540-36-3	107	%	70-130	09.29.18 00.32		



# Certificate of Analytical Results 599986

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS13** Matrix: Soil Date Received: 09.22.18 09.00  
 Lab Sample Id: 599986-007 Date Collected: 09.20.18 11.00 Sample Depth: 1.5 ft  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 09.25.18 13.00 Basis: Wet Weight  
 Seq Number: 3064431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.0	4.97	mg/kg	09.25.18 17.55		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 09.24.18 14.00 Basis: Wet Weight  
 Seq Number: 3064381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.25.18 10.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	149	15.0	mg/kg	09.25.18 10.13		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	33.1	15.0	mg/kg	09.25.18 10.13		1
Total TPH	PHC635	182	15.0	mg/kg	09.25.18 10.13		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	09.25.18 10.13	
o-Terphenyl	84-15-1	97	%	70-135	09.25.18 10.13	



# Certificate of Analytical Results 599986



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS13**  
Lab Sample Id: 599986-007

Matrix: Soil  
Date Collected: 09.20.18 11.00

Date Received: 09.22.18 09.00  
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.25.18 09.30

Basis: Wet Weight

Seq Number: 3064409

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.25.18 18.54	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.25.18 18.54	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.25.18 18.54	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	09.25.18 18.54	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.25.18 18.54	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.25.18 18.54	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.25.18 18.54	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.25.18 18.54		
4-Bromofluorobenzene	460-00-4	79	%	70-130	09.25.18 18.54		



# Certificate of Analytical Results 599986

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS14** Matrix: Soil Date Received: 09.22.18 09.00  
 Lab Sample Id: 599986-008 Date Collected: 09.20.18 11.05 Sample Depth: 2 ft  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 09.25.18 13.00 Basis: Wet Weight  
 Seq Number: 3064431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	528	4.95	mg/kg	09.25.18 18.00		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 09.24.18 14.00 Basis: Wet Weight  
 Seq Number: 3064381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.25.18 10.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.25.18 10.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.25.18 10.32	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.25.18 10.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	09.25.18 10.32	
o-Terphenyl	84-15-1	100	%	70-135	09.25.18 10.32	



# Certificate of Analytical Results 599986

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS14**  
 Lab Sample Id: 599986-008

Matrix: Soil  
 Date Collected: 09.20.18 11.05

Date Received: 09.22.18 09.00  
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.28.18 15.00

Basis: Wet Weight

Seq Number: 3064869

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.29.18 00.53	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.29.18 00.53	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.29.18 00.53	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.29.18 00.53	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.29.18 00.53	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.29.18 00.53	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.29.18 00.53	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	107	%	70-130	09.29.18 00.53		
1,4-Difluorobenzene	540-36-3	119	%	70-130	09.29.18 00.53		





# Certificate of Analytical Results 599986

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS15** Matrix: Soil Date Received: 09.22.18 09.00  
 Lab Sample Id: 599986-009 Date Collected: 09.20.18 11.10 Sample Depth: 1.5 ft  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 09.25.18 13.00 Basis: Wet Weight  
 Seq Number: 3064431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	114	5.00	mg/kg	09.25.18 18.06		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 09.24.18 14.00 Basis: Wet Weight  
 Seq Number: 3064381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.25.18 10.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.25.18 10.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.25.18 10.51	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.25.18 10.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	09.25.18 10.51	
o-Terphenyl	84-15-1	105	%	70-135	09.25.18 10.51	



# Certificate of Analytical Results 599986



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS15**  
Lab Sample Id: 599986-009

Matrix: Soil  
Date Collected: 09.20.18 11.10

Date Received: 09.22.18 09.00  
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064869

Date Prep: 09.28.18 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.29.18 02.17	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.29.18 02.17	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.29.18 02.17	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.29.18 02.17	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.29.18 02.17	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.29.18 02.17	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.29.18 02.17	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	106	%	70-130	09.29.18 02.17		
4-Bromofluorobenzene	460-00-4	93	%	70-130	09.29.18 02.17		



# Certificate of Analytical Results 599986

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS16** Matrix: Soil Date Received: 09.22.18 09.00  
 Lab Sample Id: 599986-010 Date Collected: 09.20.18 11.20 Sample Depth: 1.5 ft  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 09.25.18 13.00 Basis: Wet Weight  
 Seq Number: 3064431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	478	4.99	mg/kg	09.25.18 18.12		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 09.24.18 14.00 Basis: Wet Weight  
 Seq Number: 3064381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.25.18 11.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.25.18 11.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.25.18 11.09	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.25.18 11.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	09.25.18 11.09	
o-Terphenyl	84-15-1	104	%	70-135	09.25.18 11.09	



# Certificate of Analytical Results 599986



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS16**  
Lab Sample Id: 599986-010

Matrix: Soil  
Date Collected: 09.20.18 11.20

Date Received: 09.22.18 09.00  
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064869

Date Prep: 09.28.18 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.29.18 02.39	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.29.18 02.39	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.29.18 02.39	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	09.29.18 02.39	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.29.18 02.39	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.29.18 02.39	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.29.18 02.39	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	101	%	70-130	09.29.18 02.39		
1,4-Difluorobenzene	540-36-3	110	%	70-130	09.29.18 02.39		



# Certificate of Analytical Results 599986

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS17** Matrix: Soil Date Received: 09.22.18 09.00  
 Lab Sample Id: 599986-011 Date Collected: 09.20.18 11.25 Sample Depth: 1.5 ft  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 09.25.18 13.00 Basis: Wet Weight  
 Seq Number: 3064431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	142	5.00	mg/kg	09.25.18 18.18		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 09.24.18 14.00 Basis: Wet Weight  
 Seq Number: 3064381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.25.18 14.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.25.18 14.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.25.18 14.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.25.18 14.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	09.25.18 14.34	
o-Terphenyl	84-15-1	100	%	70-135	09.25.18 14.34	



# Certificate of Analytical Results 599986



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS17**  
Lab Sample Id: 599986-011

Matrix: Soil  
Date Collected: 09.20.18 11.25

Date Received: 09.22.18 09.00  
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.28.18 15.00

Basis: Wet Weight

Seq Number: 3064869

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.29.18 03.00	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.29.18 03.00	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.29.18 03.00	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	09.29.18 03.00	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.29.18 03.00	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.29.18 03.00	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.29.18 03.00	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	104	%	70-130	09.29.18 03.00		
1,4-Difluorobenzene	540-36-3	108	%	70-130	09.29.18 03.00		



# Certificate of Analytical Results 599986

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS18** Matrix: Soil Date Received: 09.22.18 09.00  
 Lab Sample Id: 599986-012 Date Collected: 09.20.18 11.30 Sample Depth: 1.5 ft  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 09.25.18 13.00 Basis: Wet Weight  
 Seq Number: 3064431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	287	5.00	mg/kg	09.25.18 18.23		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 09.24.18 14.00 Basis: Wet Weight  
 Seq Number: 3064381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.25.18 12.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.25.18 12.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.25.18 12.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.25.18 12.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	09.25.18 12.23	
o-Terphenyl	84-15-1	104	%	70-135	09.25.18 12.23	





# Certificate of Analytical Results 599986



## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS18**  
Lab Sample Id: 599986-012

Matrix: Soil  
Date Collected: 09.20.18 11.30

Date Received: 09.22.18 09.00  
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064869

Date Prep: 09.28.18 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	09.29.18 03.21	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.29.18 03.21	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.29.18 03.21	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	09.29.18 03.21	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	09.29.18 03.21	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	09.29.18 03.21	U	1
Total BTEX		<0.00198	0.00198	mg/kg	09.29.18 03.21	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	107	%	70-130	09.29.18 03.21		
4-Bromofluorobenzene	460-00-4	101	%	70-130	09.29.18 03.21		



# Certificate of Analytical Results 599986

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS19** Matrix: Soil Date Received: 09.22.18 09.00  
 Lab Sample Id: 599986-013 Date Collected: 09.20.18 12.30 Sample Depth: 6 In  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 09.25.18 13.00 Basis: Wet Weight  
 Seq Number: 3064431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	09.25.18 18.40	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 09.24.18 14.00 Basis: Wet Weight  
 Seq Number: 3064381

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.25.18 12.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.25.18 12.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.25.18 12.42	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.25.18 12.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	09.25.18 12.42	
o-Terphenyl	84-15-1	96	%	70-135	09.25.18 12.42	



# Certificate of Analytical Results 599986

## LT Environmental, Inc., Arvada, CO

PLU 213

Sample Id: **SS19**  
 Lab Sample Id: 599986-013

Matrix: Soil  
 Date Collected: 09.20.18 12.30

Date Received: 09.22.18 09.00  
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064869

Date Prep: 09.28.18 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.29.18 03.42	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.29.18 03.42	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.29.18 03.42	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	09.29.18 03.42	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.29.18 03.42	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.29.18 03.42	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.29.18 03.42	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	85	%	70-130	09.29.18 03.42		
1,4-Difluorobenzene	540-36-3	115	%	70-130	09.29.18 03.42		



## 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

**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 213

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064431

MB Sample Id: 7662963-1-BLK

Matrix: Solid

LCS Sample Id: 7662963-1-BKS

Prep Method: E300P

Date Prep: 09.25.18

LCSD Sample Id: 7662963-1-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	255	102	255	102	90-110	0	20	mg/kg	09.25.18 16:32	

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064431

MB Sample Id: 7662975-1-BLK

Matrix: Solid

LCS Sample Id: 7662975-1-BKS

Prep Method: E300P

Date Prep: 09.25.18

LCSD Sample Id: 7662975-1-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	258	103	258	103	90-110	0	20	mg/kg	09.25.18 20:00	

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064431

Parent Sample Id: 599986-001

Matrix: Soil

MS Sample Id: 599986-001 S

Prep Method: E300P

Date Prep: 09.25.18

MSD Sample Id: 599986-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	229	250	474	98	476	99	90-110	0	20	mg/kg	09.25.18 16:49	

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064431

Parent Sample Id: 599986-012

Matrix: Soil

MS Sample Id: 599986-012 S

Prep Method: E300P

Date Prep: 09.25.18

MSD Sample Id: 599986-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	287	250	524	95	534	99	90-110	2	20	mg/kg	09.25.18 18:29	

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064441

Parent Sample Id: 599898-003

Matrix: Soil

MS Sample Id: 599898-003 S

Prep Method: E300P

Date Prep: 09.25.18

MSD Sample Id: 599898-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	236	249	487	101	493	103	90-110	1	20	mg/kg	09.25.18 21:36	

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 213

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064441

Parent Sample Id: 599986-002

Matrix: Soil

MS Sample Id: 599986-002 S

Prep Method: E300P

Date Prep: 09.25.18

MSD Sample Id: 599986-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	26.8	250	288	104	289	105	90-110	0	20	mg/kg	09.25.18 20:17	

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3064381

MB Sample Id: 7662957-1-BLK

Matrix: Solid

LCS Sample Id: 7662957-1-BKS

Prep Method: TX1005P

Date Prep: 09.24.18

LCSD Sample Id: 7662957-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	967	97	1020	102	70-135	5	20	mg/kg	09.24.18 23:21	
Diesel Range Organics (DRO)	<8.13	1000	993	99	1060	106	70-135	7	20	mg/kg	09.24.18 23:21	

## Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		122		128		70-135	%	09.24.18 23:21
o-Terphenyl	109		115		126		70-135	%	09.24.18 23:21

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3064381

Parent Sample Id: 599985-021

Matrix: Soil

MS Sample Id: 599985-021 S

Prep Method: TX1005P

Date Prep: 09.24.18

MSD Sample Id: 599985-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.98	997	925	93	916	92	70-135	1	20	mg/kg	09.25.18 00:18	
Diesel Range Organics (DRO)	<8.10	997	951	95	937	94	70-135	1	20	mg/kg	09.25.18 00:18	

## Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		114		70-135	%	09.25.18 00:18
o-Terphenyl	109		111		70-135	%	09.25.18 00:18

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 213

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3064409

MB Sample Id: 7662981-1-BLK

Matrix: Solid

LCS Sample Id: 7662981-1-BKS

Prep Method: SW5030B

Date Prep: 09.25.18

LCSD Sample Id: 7662981-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.108	108	0.107	106	70-130	1	35	mg/kg	09.25.18 11:33	
Toluene	<0.00200	0.100	0.111	111	0.107	106	70-130	4	35	mg/kg	09.25.18 11:33	
Ethylbenzene	<0.00200	0.100	0.109	109	0.107	106	70-130	2	35	mg/kg	09.25.18 11:33	
m,p-Xylenes	<0.00401	0.200	0.218	109	0.215	107	70-130	1	35	mg/kg	09.25.18 11:33	
o-Xylene	<0.00200	0.100	0.105	105	0.103	102	70-130	2	35	mg/kg	09.25.18 11:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		87		91		70-130	%	09.25.18 11:33
4-Bromofluorobenzene	94		84		87		70-130	%	09.25.18 11:33

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3064696

MB Sample Id: 7663148-1-BLK

Matrix: Solid

LCS Sample Id: 7663148-1-BKS

Prep Method: SW5030B

Date Prep: 09.27.18

LCSD Sample Id: 7663148-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0776	78	0.0717	71	70-130	8	35	mg/kg	09.27.18 13:00	
Toluene	<0.00200	0.100	0.0757	76	0.0705	70	70-130	7	35	mg/kg	09.27.18 13:00	
Ethylbenzene	<0.00200	0.100	0.0847	85	0.0807	80	70-130	5	35	mg/kg	09.27.18 13:00	
m,p-Xylenes	<0.00401	0.200	0.168	84	0.161	80	70-130	4	35	mg/kg	09.27.18 13:00	
o-Xylene	<0.00200	0.100	0.0871	87	0.0828	82	70-130	5	35	mg/kg	09.27.18 13:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		74		90		70-130	%	09.27.18 13:00
4-Bromofluorobenzene	104		130		129		70-130	%	09.27.18 13:00

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3064869

MB Sample Id: 7663271-1-BLK

Matrix: Solid

LCS Sample Id: 7663271-1-BKS

Prep Method: SW5030B

Date Prep: 09.28.18

LCSD Sample Id: 7663271-1-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	0.0996	0.0759	76	0.0772	77	70-130	2	35	mg/kg	09.28.18 19:54	
Toluene	<0.00199	0.0996	0.0727	73	0.0718	72	70-130	1	35	mg/kg	09.28.18 19:54	
Ethylbenzene	<0.00199	0.0996	0.0840	84	0.0857	86	70-130	2	35	mg/kg	09.28.18 19:54	
m,p-Xylenes	<0.00398	0.199	0.164	82	0.169	85	70-130	3	35	mg/kg	09.28.18 19:54	
o-Xylene	<0.00199	0.0996	0.0850	85	0.0874	87	70-130	3	35	mg/kg	09.28.18 19:54	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		115		123		70-130	%	09.28.18 19:54
4-Bromofluorobenzene	98		116		118		70-130	%	09.28.18 19:54

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 213

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3064409

Parent Sample Id: 599927-004

Matrix: Soil

MS Sample Id: 599927-004 S

Prep Method: SW5030B

Date Prep: 09.25.18

MSD Sample Id: 599927-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.104	104	0.0732	72	70-130	35	35	mg/kg	09.25.18 12:13	
Toluene	<0.00200	0.100	0.104	104	0.0764	76	70-130	31	35	mg/kg	09.25.18 12:13	
Ethylbenzene	<0.00200	0.100	0.104	104	0.0754	75	70-130	32	35	mg/kg	09.25.18 12:13	
m,p-Xylenes	<0.00400	0.200	0.212	106	0.151	75	70-130	34	35	mg/kg	09.25.18 12:13	
o-Xylene	<0.00200	0.100	0.101	101	0.0706	70	70-130	35	35	mg/kg	09.25.18 12:13	

## Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		88		70-130	%	09.25.18 12:13
4-Bromofluorobenzene	95		87		70-130	%	09.25.18 12:13

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3064696

Parent Sample Id: 600476-001

Matrix: Soil

MS Sample Id: 600476-001 S

Prep Method: SW5030B

Date Prep: 09.27.18

MSD Sample Id: 600476-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0209	21	0.0274	27	70-130	27	35	mg/kg	09.27.18 13:44	X
Toluene	<0.00200	0.100	0.0189	19	0.0255	25	70-130	30	35	mg/kg	09.27.18 13:44	X
Ethylbenzene	<0.00200	0.100	0.0193	19	0.0273	27	70-130	34	35	mg/kg	09.27.18 13:44	X
m,p-Xylenes	<0.00401	0.200	0.0356	18	0.0520	26	70-130	37	35	mg/kg	09.27.18 13:44	XF
o-Xylene	<0.00200	0.100	0.0191	19	0.0265	26	70-130	32	35	mg/kg	09.27.18 13:44	X

## Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		103		70-130	%	09.27.18 13:44
4-Bromofluorobenzene	116		99		70-130	%	09.27.18 13:44

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3064869

Parent Sample Id: 599985-019

Matrix: Soil

MS Sample Id: 599985-019 S

Prep Method: SW5030B

Date Prep: 09.28.18

MSD Sample Id: 599985-019 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0591	59	0.0702	70	70-130	17	35	mg/kg	09.28.18 20:37	X
Toluene	<0.00200	0.0998	0.0568	57	0.0678	68	70-130	18	35	mg/kg	09.28.18 20:37	X
Ethylbenzene	<0.00200	0.0998	0.0662	66	0.0786	79	70-130	17	35	mg/kg	09.28.18 20:37	X
m,p-Xylenes	<0.00399	0.200	0.128	64	0.153	77	70-130	18	35	mg/kg	09.28.18 20:37	X
o-Xylene	<0.00200	0.0998	0.0660	66	0.0790	79	70-130	18	35	mg/kg	09.28.18 20:37	X

## Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		111		70-130	%	09.28.18 20:37
4-Bromofluorobenzene	111		113		70-130	%	09.28.18 20:37

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



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Stafford, Texas (281-240-4200)  
Dallas Texas (214-902-0300)

## CHAIN OF CUSTODY

Page 1 of 2

**San Antonio, Texas (210-509-3334)**

[www.xenco.com](http://www.xenco.com)

**Phoenix, Arizona (480-355-0900)**

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes				
Company Name / Branch: LT Environmental, Inc. - Permian Office				Project Name/Number: <b>PLO 213</b>												
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705				Project Location: <b>Carlsbad, NM</b>												
Email: Abaker@lienw.com Project Contact: Adrian Baker				Phone No: (432) 704-5178				Invoice To: XTO Energy - Kyle Littlell								
Sample's Name <b>Bentall</b>				PO Number: <b>2R8-4745</b>												
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX EPA 8020 TPH EPA 8015 Chlorides 8001	
1	S508	2'	9/20/18	1020	S	1										
2	S509	1.5'		1025			X	X	X	X	X	X	X	X		
3	S510	1.5'		1030			X	X	X	X	X	X	X	X		
4	F501	3.5'		1040			X	X	X	X	X	X	X	X		
5	S511	6"		1050			X	X	X	X	X	X	X	X		
6	S512	6"		1055			X	X	X	X	X	X	X	X		
7	S513	1.5'		1100			X	X	X	X	X	X	X	X		
8	S514	2'		1105			X	X	X	X	X	X	X	X		
9	S515	1.5'		1110			X	X	X	X	X	X	X	X		
10	S516	1.5'		1120			X	X	X	X	X	X	X	X		
Turnaround Time (Business days)				Data Deliverable Information				Notes:								
<input type="checkbox"/> Same Day TAT <input checked="" type="checkbox"/> 5 Day TAT				<input type="checkbox"/> Level II Std QC <input type="checkbox"/> Level IV (Full Data Pkg / raw data)												
<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												
<input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> Contract TAT				<input type="checkbox"/> Level 3 (CLP Forms) <input type="checkbox"/> UST / RG-411												
<input type="checkbox"/> 3 Day EMERGENCY				<input type="checkbox"/> TRRP Checklist												
TAT Starts Day received by Lab, if received by 5:00 pm																
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURTESY DELIVERY																
Relinquished by Sampler: <b>BT.Ble</b>		Date Time: <b>9/20/18 17:25</b>		Received By: <b>[Signature]</b>		Relinquished by: <b>[Signature]</b>		Date Time: <b>9/21/18 15:30</b>		Received By: <b>[Signature]</b>		FED-EX / UPS Tracking # <b>73297462707</b>				
Relinquished by:		Date Time:		Received By:		Relinquished By:		Date Time:		Received By:						
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Relinquished by:		Date Time:		Received By:		Relinquished By:		Date Time:		Received By:						



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Stafford, Texas (281-240-4200)  
Dallas Texas (214-902-0300)

# CHAIN OF CUSTODY

Page 2 of 2

San Antonio, Texas (210-609-3334)  
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Xenco Quote #

Xenco Job #

599984

Matrix Codes

## Client / Reporting Information

Company Name / Branch:

LT Environmental, Inc. - Permian Office

Company Address:

3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705

Email:

Abaker@lienv.com (432) 704-5178

Project Contact:

Adrian Baker

Samplers Name

Don Baker

## Project Information

Project Name/Number:

PLU 213

Project Location:

Carlsbad, NM

Invoice To:

XTO Energy - Kyle Litrell

PO Number:

ZRF-4745

## Analytical Information

BTEX EPA 8020  
TPH EPA 8015  
Chlorides 300.1

Field Comments

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

No. Field ID / Point of Collection

No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Notes
1		5'57	4.5'	9/20/18	1125	5	1								
2		3518	1.5'	9/20/18	1130	5	1								
3		3514	6"	9/20/18	1230	5	1								
4															
5															
6															
7															
8															
9															
10															

Data Deliverable Information

Notes:

Same Day TAT

☒ 5 Day TAT

Level II Std QC

☐

Level IV (Full Data Pkg / raw data)

☐

Next Day EMERGENCY

☐ 7 Day TAT

Level III Std QC+ Forms

☐

TRRP Level IV

☐

2 Day EMERGENCY

☐ Contract TAT

Level 3 (CLP Forms)

☐

UST / RG -411

☐

3 Day EMERGENCY

☐ TRRP Checklist

☐

☐

☐

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

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COUNTRY DELIVERY

FED-EX / UPS: Tracking # 773097403767

Relinquished by Sampler

Date Time:

9/20/18 1725

Received By:

Don Baker

Relinquished by:

Carl Baker

Date Time:

9/21/18 15:30

Received By:

Carl Baker

Relinquished by:

Date Time:

9/20/18 1725

Received By:

Don Baker

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Carl Baker

Date Time:

9/21/18 15:30

Received By:

Carl Baker

Office

Cogler Temp

Thermo Corr. Factor

9/20/18

9/20/18

Notice: Notice: Signatures 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 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 each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

ORIGIN ID:CAOA (575) 887-6245 XENCO SATURDAY PAC N MAIL 910 W PIERCE ST CARLSBAD, NM 88220 UNITED STATES US		SHIP DATE: 21SEP18 ACTWGT: 43.00 LB CAD: 101813706INET4040 DIMS: 19x13x16 IN BILL RECIPIENT
TO HOLD FOR XENCO FEDEX OFFICE PRINT & SHIP CENTER FEDEX OFFICE PRINT & SHIP CENTER 200 W INTERSTATE 20 MIDLAND TX 79701 (806) 674-0639 INV. REF: XENCO DEPT.		
 		
TRK# 7732 9746 2767 0201 SATURDAY HOLD PRIORITY OVERNIGHT HLD TX-US LBB 41 MAFKA 		

552J11F78C/DCA5

**After printing this label:**

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

**Warning:** Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on [fedex.com](http://fedex.com). FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.





Client: LT Environmental, Inc.

Date/ Time Received: 09/22/2018 09:00:00 AM

Work Order #: 599986

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

## Sample Receipt Checklist

## Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 09/24/2018

Checklist reviewed by:

Jessica Kramer

Date: 09/24/2018

**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 199561

CONDITIONS

Operator: BOPCO, L.P. 6401 Holiday Hill Rd Midland, TX 79707	OGRID: 260737
	Action Number: 199561
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	3/22/2023