



LT Environmental, Inc.

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

APPROVED

March 20, 2020

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

The OCD approves the Closure Report C-141 for incident #NIMW1231129593 with the following conditions.

- Depth to groundwater is not adequately identified. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided. If evidence of depth to ground water within a ½ mile radius of the site cannot be provided, impacted soils will need to meet Table 1 Closure Criteria for ground water at a depth of 50 feet or less.
- This release does appear to have been vertically and horizontally defined to 4' and does appear to meet the strictest remediation requirements in Table 1 19.15.29.12 NMAC.

**RE: Closure Request**  
**Poker Lake Unit Delaware C Saltwater Disposal Battery/Delaware C Tank Battery**  
**Remediation Permit Numbers 2RP-1205, 2RP-1304, 2RP-1305, 2RP-1383, and**  
**2RP-2264**  
**Eddy County, New Mexico**

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request detailing site assessment and soil sampling activities at the Poker Lake Unit (PLU) Delaware C Saltwater Disposal (SWD) Battery/Delaware C Tank Battery (Site) in Unit G, Section 6, Township 24 South, Range 30 East, Eddy County, New Mexico (Figure 1). The purpose of the site assessment and soil sampling activities was to assess for the presence or absence of impacted soil resulting from five historical releases of crude oil and/or produced water at the Site. Based on the assessment activities and results of the soil sampling events, XTO is submitting this Closure Request, requesting no further action for the release events.

The releases are included in the Compliance Agreement for Remediation for Historical Releases (Compliance Agreement) between XTO and the New Mexico Oil Conservation Division (NMOCD) effective November 13, 2018. The purpose of the Compliance Agreement is to ensure reportable releases that occurred prior to August 14, 2018, where XTO is responsible for the corrective action, comply with Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) as amended on August 14, 2018. The releases are categorized as Tier IV sites in the Compliance Agreement, meaning the releases occurred prior to August 14, 2018, the effective date of 19.15.29 NMAC; however, remediation was ongoing.

## RELEASE BACKGROUND

On May 30, 2012, a pipe fitting on the discharge line from SWD pump broke and caused the release of approximately 25 barrels (bbls) of produced water. Approximately 1,960 square feet of pasture west of the tank battery was affected by the release. No released fluids were recovered. The former operator reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 (Form C-141) on June 24, 2012 and was assigned Remediation Permit (RP) Number 2RP-1205 (Attachment 1).



On August 18, 2012, the water transfer pumps failed, causing produced water tanks to overflow. Approximately 10 bbls of crude oil and 20 bbls of produced water were released. Approximately 900 square feet of the tank battery containment and 2,000 square feet of pasture west of the tank battery were affected by the release. No released fluids were recovered. Approximately 40 cubic yards of impacted soil were excavated from the containment. The excavation was sampled, backfilled, and a liner was installed. The former operator reported the release to the NMOCD on a Form C-141 on September 5, 2012 and was assigned RP Number 2RP-1305 (Attachment 1).

On September 2, 2012, the truck load line valve was left open, allowing approximately 200 bbls of produced water to spill onto the surface of the caliche pad. Approximately 11,770 square feet of pad and lease road, and 7,060 square feet of pasture were affected by the release. A vacuum truck recovered 5 bbls of free-standing fluid, and a backhoe was used to scrape up the saturated soil. The former operator reported the release to the NMOCD on a Form C-141 on September 5, 2012 and was assigned RP Number 2RP-1304 (Attachment 1).

On September 19, 2012, a connection going from the charge pumps to the H-pump failed. The pumps were shut down upon discovery. Approximately 650 bbls of produced water were released; no released fluids were recovered. The well pad, lease road, and adjacent pasture were affected by the release. Delineation activities were scheduled to determine the extent of impacted soil at the Site. The former operator reported the release to the NMOCD on a Form C-141 on September 28, 2012 and was assigned RP Number 2RP-1383 (Attachment 1).

On April 21, 2014, a high-pressure fiberglass line coupling broke at the threads, causing approximately 200 bbls of produced water to release. A vacuum truck recovered approximately 15 bbls of produced water. Approximately 4,000 square feet of caliche pad, 1,300 square feet of lease road, and 4,200 square feet of pasture were affected by the release. Remediation of all releases was scheduled to take place during the upcoming SWD dismantling and tank battery relocation activities. The former operator reported the release to the NMOCD on a Form C-141 on April 24, 2014 and was assigned RP Number 2RP-2264 (Attachment 1).

Although all five of the releases 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 releases occurred in the same general area of the well pad, lease road, and pasture, site assessment and soil sampling activities were completed to address and close all five releases simultaneously. The initial Form C-141s indicated that soil excavation activities had occurred and that additional remediation activities were scheduled for 2014.

## SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of 19.15.29.12 of the NMAC. Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted



groundwater well with depth to groundwater data is New Mexico Office of State Engineer (NMOSE) well C-02108, located approximately 1.34 miles southeast of the Site. The water well has a depth to groundwater of 186 feet bgs and a total depth of 200 feet bgs. The closest continuously flowing water or significant watercourse to the Site is an unnamed dry wash located approximately 1,590 feet northwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a low-potential karst area.

### CLOSURE CRITERIA

- Based on the results of the Site Characterization, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:
- Benzene: 10 milligrams per kilogram (mg/kg);
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg;
- TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg;
- Total petroleum hydrocarbons (TPH): 2,500 mg/kg; and
- Chloride: 20,000 mg/kg.

A closure criteria of 600 mg/kg chloride was applied to the pasture area that was impacted by the release, per NMAC 19.15.29.13.D (1) for the top 4 feet of areas that will be reclaimed following remediation.

### SITE ASSESSMENT AND DELINEATION SOIL SAMPLING ACTIVITIES

During February and August 2018, LTE inspected the Site to evaluate the release areas associated with the five historical releases. Sixteen preliminary soil samples (SS1 through SS16) were collected within and around the release areas to assess the lateral extent of impacted soil. The soil sample locations, depicted on Figure 2, were selected based on information provided on the initial Form C-141 and field observations. To eliminate the effects from weathering and natural degradation of contaminants at the ground surface, soil samples SS3 through SS5 and SS7 through SS16 were collected from a depth of 0.5 feet bgs.

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



range organics (ORO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0. The soil sample locations are depicted on Figure 2.

Between August 2018 and October 2019, LTE personnel returned to the Site to oversee additional site assessment activities.

Boreholes and potholes were advanced via track hoe or hand auger at 24 locations on the well pad, lease road, and pasture to assess the lateral and vertical extent of impacted soil. Boreholes BH01 through BH16 were advanced to depths ranging from 2 feet to 14 feet bgs at the approximate locations of preliminary soil samples SS01 through SS16. Potholes PH17 through PH24 were advanced to a depth of 2 feet bgs within the well pad release area. Potholes PH18, PH19, and PH20 were advanced in the area around preliminary soil sample SS7 where hydrocarbon impacted soil was initially identified. Delineation soil samples were collected from each borehole and pothole from depths ranging from 2 feet to 14 feet bgs. Soil from the boreholes and potholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for the boreholes and potholes were logged on lithologic/soil sampling logs, which are included in Attachment 2. The delineation soil sample locations are depicted on Figure 3.

The delineation soil samples were collected, handled, and analyzed as described above and submitted to Xenco. Photographic documentation was conducted during the Site visits. Photographs are included in Attachment 3.

## ANALYTICAL RESULTS

Laboratory analytical results for preliminary soil samples SS1 through SS6 and SS08 through SS16, indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results indicated that GRO/DRO and TPH concentrations exceeded the Closure Criteria in preliminary soil sample SS7, collected on the well pad from a depth of 0.5 feet bgs.

Laboratory analytical results for the delineation soil samples collected from boreholes BH01 through BH16 and potholes PH17 through PH24, indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria.

Laboratory analytical results indicated that chloride concentrations were below 600 mg/kg in soil samples SS3 through SS6, SS08 through SS11, and BH08 through BH12, that were collected from the top four feet of the pasture.



Billings, B.  
Page 5

## CLOSURE REQUEST

Site assessment and soil sampling activities were completed within the release areas on the well pad, lease road, and pasture to assess for soil impacts resulting from five historical releases at the Site. Laboratory analytical results for preliminary soil samples SS1 through SS6 and SS08 through SS16, and delineation soil samples collected from boreholes BH01 through BH16 and potholes PH17 through PH24 indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Additionally, laboratory analytical results indicated that chloride concentrations were below 600 mg/kg in soil samples SS3 through SS6, SS08 through SS11, and BH08 through BH12, that were collected from the top four feet of the pasture.

Laboratory analytical results indicated that GRO/DRO and TPH concentrations exceeded the Closure Criteria in preliminary soil sample SS7, collected during February 2018 from a depth of 0.5 feet bgs. Preliminary soil sample SS7 was located on pad approximately 35 feet to the north of the SWD tank battery containment. During October 2019, potholes PH18, PH19, and PH20 were advanced in the area around preliminary soil sample SS7. Delineation soil samples were collected from depths of one foot and two feet bgs from each pothole. Laboratory analytical results for the delineation soil samples collected from potholes PH18, PH19, and PH20, indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. In addition, the lithologic boring logs indicated no reportable PID measurements, and no staining or petroleum odor. Based on field screening activities and laboratory analytical results, no impacted soil remained in the area around preliminary soil sample SS7.

Based on the soil sample laboratory analytical results from the site assessment activities, no further remediation was required. The historical releases occurred during 2012 and 2014. The former operator indicated on the initial Form C-141s that excavation activities had occurred, and that additional remediation of impacted soil was being scheduled. The absence of impacted soil identified during LTE's assessment activities implies that unreported remediation/excavation activities have been completed at the Site in the past by the previous operator. Additionally, vegetation in the pasture appeared healthy and consistent with the surrounding vegetation.

Initial response efforts, natural attenuation, and presumed historical excavation of impacted soil have mitigated impacts at this Site. XTO requests no further action for RP Numbers 2RP-1205, 2RP-1304, 2RP-1305, 2RP-1383, and 2RP-2264. 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. Ashley Ager at (970) 385-1096.



Billings, B.  
Page 6

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in blue ink that reads 'Kevin M. Axe'.

Kevin M. Axe, P.G.  
Senior Geologist

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

Ashley L. Ager, P.G.  
Senior Geologist

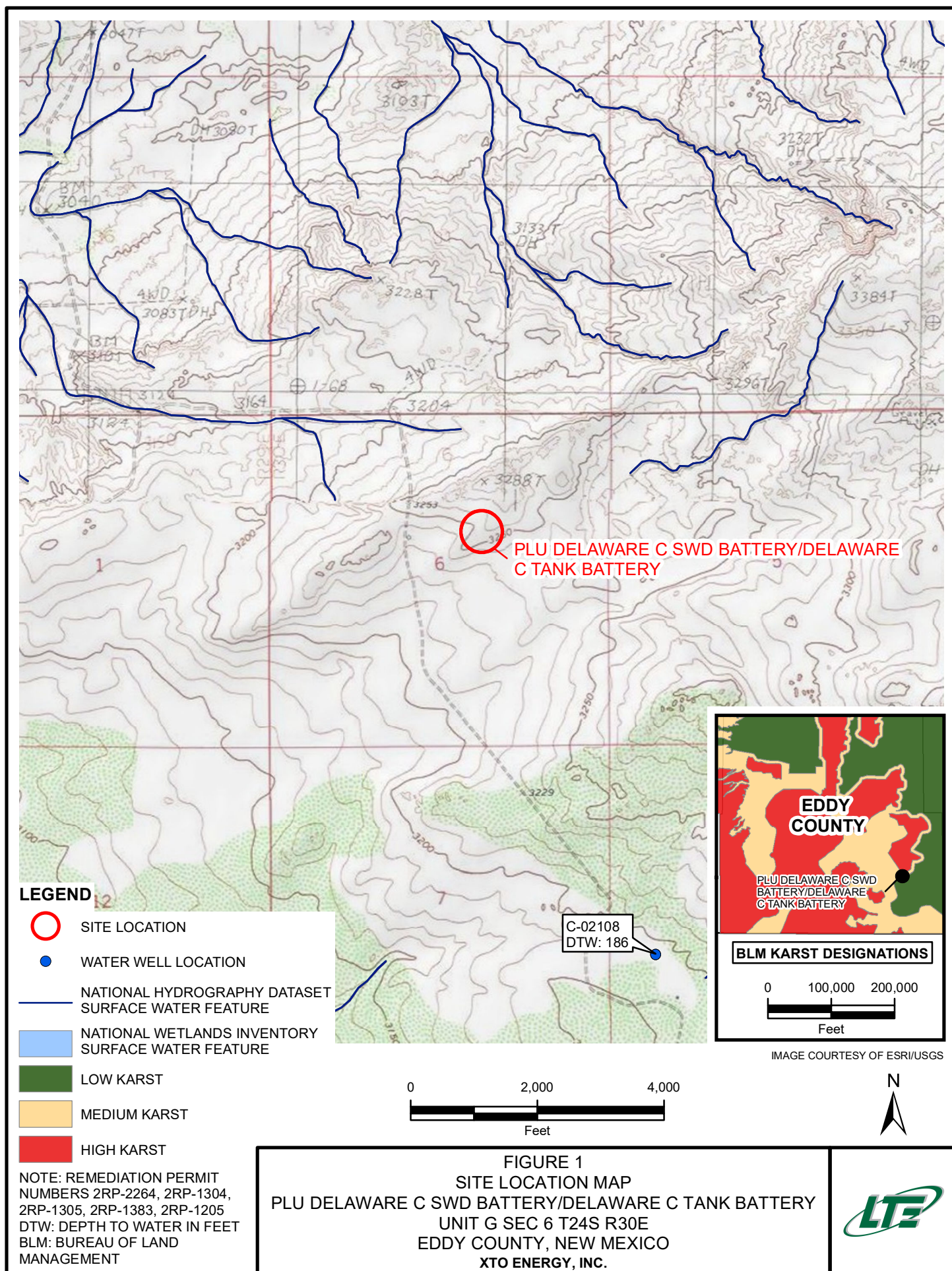
cc: Kyle Littrell, XTO  
Mike Bratcher, NMOCD  
Bureau of Land Management

Attachments:

Figure 1 Site Location Map  
Figure 2 Preliminary Soil Sample Locations  
Figure 3 Delineation Soil Sample Locations  
Table 1 Soil Analytical Results  
Attachment 1 Initial/Final NMOCD Form C-141 (2RP-1205, 2RP-1304, 2RP-1305, 2RP-1383, and 2RP-2264)  
Attachment 2 Lithologic / Soil Sample Logs  
Attachment 3 Photographic Log  
Attachment 4 Laboratory Analytical Reports

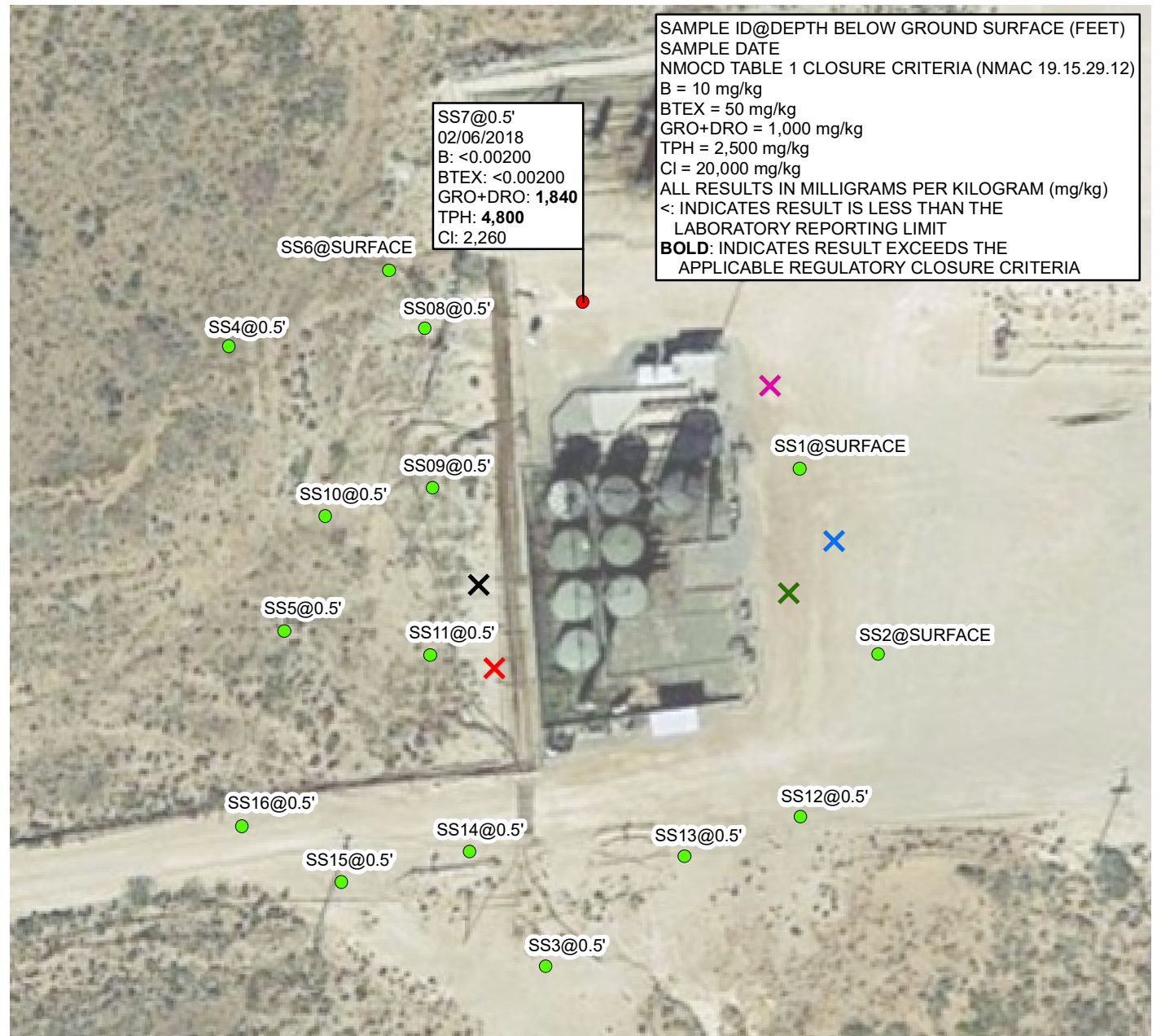
FIGURES





P:\XTO Energy\GIS\MXD\012918038\_DELAWARE C SWD\012918038\_FIG01\_RECEPTOR\_SL\_2020.mxd





**FIGURE 2**  
**PRELIMINARY SOIL SAMPLE LOCATIONS**  
**PLU DELAWARE C SWD BATTERY/DELAWARE C TANK BATTERY**  
**UNIT G SEC 6 T24S R30E**  
**EDDY COUNTY, NEW MEXICO**  
**XTO ENERGY, INC.**

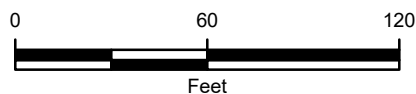




IMAGE COURTESY OF GOOGLE EARTH 2017

**LEGEND**RELEASE LOCATION  
(2RP-1205)DELINEATION SOIL SAMPLE IN COMPLIANCE  
WITH APPLICABLE CLOSURE CRITERIARELEASE LOCATION  
(2RP-1304)RELEASE LOCATION  
(2RP-1305)RELEASE LOCATION  
(2RP-1383)RELEASE LOCATION  
(2RP-2264)

SAMPLE ID@DEPTH BELOW  
GROUND SURFACE (FEET)  
NOTE: REMEDIATION PERMIT  
NUMBERS 2RP-2264, 2RP-1304,  
2RP-1305, 2RP-1383, 2RP-1205



**FIGURE 3**  
**DELINEATION SOIL SAMPLE LOCATIONS**  
**PLU DELAWARE C SWD BATTERY/DELAWARE C TANK BATTERY**  
**UNIT G SEC 6 T24S R30E**  
**EDDY COUNTY, NEW MEXICO**  
**XTO ENERGY, INC.**





TABLES



**TABLE 1**  
**SOIL ANALYTICAL RESULTS**

**PLU DELAWARE C SWD BATTERY/DELAWARE C TANK BATTERY**  
**REMEDIATION PERMIT NUMBER 2RP-1205, 2RP-1304, 2RP-1305, 2RP-1383, and 2RP-2264**  
**EDDY COUNTY, NEW MEXICO**  
**XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
<b>NMOCD Table 1 Closure Criteria</b>			<b>10</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>50</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>1,000</b>	<b>2,500</b>	<b>20,000</b>
SS1	Surface	02/06/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	58.1	37.3	58.1	95.4	2,140
SS2	Surface	02/06/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	25.2	<15.0	25.2	25.2	6,270
SS3	0.5	02/06/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	23.2*
SS4	0.5	02/06/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99*
SS5	0.5	02/06/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99*
SS6	Surface	02/06/2018	<0.00355	<0.00355	<0.00355	<0.00355	<0.00355	<15.0	<15.0	<15.0	<15.0	<15.0	<4.98*
SS7	0.5	02/06/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	1,840	410	<b>1,840</b>	<b>4,800</b>	2,260
SS08	0.5	08/20/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	61.9	<15.0	61.9	61.9	<1.00*
SS09	0.5	08/20/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	6.32*
SS10	0.5	08/20/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99*
SS11	0.5	08/20/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	64.4*
SS12	0.5	08/21/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	81.5	<15.0	81.5	81.5	1,800
SS13	0.5	08/21/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	15.5	<14.9	15.5	15.5	258
SS14	0.5	08/21/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	183
SS15	0.5	08/21/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	82.0
SS16	0.5	08/21/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	491
BH01	14	08/17/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	77.2
BH02	5.5	08/17/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	74.4
BH03	4	08/17/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	51.7
BH04	9.5	08/17/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	188
BH05	6	08/17/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	172
BH06	9	08/17/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	71.6
BH07	12	08/17/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	2,550
BH08	2	08/20/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	24.1*
BH09	2	08/20/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	<14.9	<1.00*
BH10	2	08/20/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	3.07*
BH11	2	08/20/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	147*
BH12	2	08/20/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	500*
BH13	12	08/20/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	90.0



A proud member  
of WSP

TABLE 1  
SOIL ANALYTICAL RESULTS

PLU DELAWARE C SWD BATTERY/DELAWARE C TANK BATTERY  
REMEDIATION PERMIT NUMBER 2RP-1205, 2RP-1304, 2RP-1305, 2RP-1383, and 2RP-2264  
EDDY COUNTY, NEW MEXICO  
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000
BH14	3	08/21/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	60.7	<15.0	60.7	60.7	317
BH15	2	08/21/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	1,080
BH16	2	08/21/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	20.6	<14.9	20.6	20.6	453
PH17	1	10/24/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	912
PH17A	2	10/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	577
PH18	1	10/24/2019	<0.00208	<0.00208	<0.00208	<0.00208	<0.00208	<50.0	<50.0	<50.0	<50.0	<50.0	519
PH18A	2	10/24/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	13.8
PH19	1	10/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	614
PH19A	2	10/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	16.3
PH20	1	10/24/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	579
PH20A	2	10/24/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	1,200
PH21	1	10/24/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	833
PH21A	2	10/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	1,480
PH22	1	10/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,060
PH22A	2	10/24/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	931
PH23	1	10/24/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	1,260
PH23A	2	10/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,260
PH24	1	10/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	384
PH24A	2	10/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	319

**Notes:**

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

ORO - oil range organics

NMAC - New Mexico Administrative Code

NMOCD - New Mexico Oil Conservation Division

NE - not established

TPH - total petroleum hydrocarbons

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

< indicates result is below laboratory reporting limits

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

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

ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-1205, 2RP-1305, 2RP-1304, 2RP-1383, and 2RP-2264)

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

## Release Notification and Corrective Action

**OPERATOR** ☒ Initial Report ☐ Final Report

**nJMW 1219345739**

Name of Company BOPCO, L.P.	260737	Contact Tony Savoie
Address 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220		Telephone No. 432-556-8730
Facility Name: Poker Lake Unit Delaware C SWD Battery		Facility Type E&P

Surface Owner Federal	Mineral Owner Federal	Lease No 8910003031 <b>API-4</b>
-----------------------	-----------------------	----------------------------------

**Poker Lake Unit #153**

**LOCATION OF RELEASE** **30-015-31412**

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

Latitude N 32.248850 Longitude W 103.919067

## NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 25 bbls of produced water	Volume Recovered: None
Source of Release: Produced water storage tank	Date and Hour of Occurrence 5/30/12, Hour unknown	Date and Hour of Discovery 5/30/12 8:30 a.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NMOCD Emergency #104 and Jim Amos with the BLM	
By Whom? Tony Savoie	Date and Hour 6/1/12, NMOCD at 11:41 a.m. BLM at 11:45 a.m. The report was delayed due to a medical situation with T.S.	
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.\* A pipe fitting on the discharge line from the SWD pump broke, the pipe connection was replaced the same day.

Describe Area Affected and Cleanup Action Taken.. Approximately 1960 sq.ft. of pasture land was impacted west of the tank battery, this area has had several flow line spills in the same area that the release covered. All of the fluid soaked into the ground before it could be recovered. A remediation plan will be developed in accordance with the NMOCD and BLM remediation guidelines.

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

Signature: <u>Tony Savoie</u>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Tony Savoie	Approved by District Supervisor: Signed By <u>Mike Brannon</u>	
Title: Waste Mgmt. & Remediation Specialist	Approval Date: <b>JUL 11 2012</b>	Expiration Date:
E-mail Address: TASavoie@BassPet.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 6/24/12	Phone: 432-556-8730	

\* Attach Additional Sheets If Necessary

Remediation per OCD Rules &  
Guidelines. **SUBMIT REMEDIATION  
PROPOSAL NOT LATER THAN:**

8/11/12

**2RP-1205**  
**RECEIVED**  
JUN 26 2012  
NMOCD ARTESIA

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

State of New Mexico  
Energy Minerals and Natural  
Resources Department

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

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

Incident ID	
District RP	2RP-1205
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-1205
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

### Location of Release Source

Latitude 32.248850 Longitude -103.919067  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Poker Lake Unit Delaware C SWD Battery	Site Type Exploration and Production
Date Release Discovered 5/30/2012	API# (if applicable) 30-015-31412

Unit Letter	Section	Township	Range	County
G	6	24S	30E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 25 bbls	Volume Recovered (bbls) 0 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release

A pipe fitting on the discharge line from the SWD pump broke. The fitting was replaced the same day. An area covering approximately 1,960 sq. ft of pasture land was affected west of the tank battery.



Incident ID	
District RP	2RP-1205
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?  The release volume was greater than 25 bbls.
If YES, was immediate notice given to the OCD? Yes, by Tony Savoie to NMOCD Emergency Response #104 and Jim Amos (BLM) on 6/1/2012 at 11:41 a.m.	

## 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 Supervisor</u>
Signature: _____	Date: <u>3/20/2020</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	
District RP	2RP-1205
Facility ID	
Application ID	

## Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	
District RP	2RP-1205
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

email: Kyle\_Littrell@xtoenergy.com Telephone: (432)-221-7331

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	
District RP	2RP-1205
Facility ID	
Application ID	

## Closure

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

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: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

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

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

Form C-141  
Revised August 8, 2011

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

### Release Notification and Corrective Action

nJMW 1228428008		<b>OPERATOR</b> <input checked="" type="checkbox"/> Initial Report <input type="checkbox"/> Final Report	
Name of Company: BOPCO, L.P. 260737		Contact: Tony Savoie	
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220		Telephone No. 575-887-7329	
Facility Name: Delaware "C" Tank Battery, same well pad as the PLU-153		Facility Type: Exploration and Production	
Surface Owner: Federal		Mineral Owner: Federal	API No. 30-015-31412

### LOCATION OF RELEASE

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

Latitude N 32.248735 Longitude W 103.918797

### NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 200 bbls produced water	Volume Recovered: 5 bbls
Source of Release: Truck load line	Date and Hour of Occurrence: 9/2/12 time unknown	Date and Hour of Discovery: 9/2/12 8:00 a.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Artesia NMOCD emergency #104	
By Whom? Tony Savoie	Date and Hour: 9/2/12 at 12:19 p.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

**RECEIVED**

SEP 06 2012

**NMOCD ARTESIA**

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

The truck load line valve was left open allowing the produced water to spill out onto the tank battery pad. The valve was closed upon discovery.

Describe Area Affected and Cleanup Action Taken.\*

Approximately 11,770 sq.ft. of caliche pad and lease road and approximately 7060 sq.ft. of pasture was affected by the release, all of the fluid that was released into the pasture soaked in, the free standing fluid was removed with a backhoe and the saturated soil on the caliche pad was scraped up and stockpiled on-site. The spill will be remediated in accordance to the NMOCD recommended guidelines for spills.

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: <u>Tony Savoie</u>		<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Tony Savoie		Approved by Environmental Specialist: Signed By <u>M. L. Brannon</u>	
Title: Waste Management and Remediation Specialist		Approval Date: <b>OCT 10 2012</b>	Expiration Date:
E-mail Address: <u>tasavoie@basspet.com</u>	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 9/5/12	Phone: 432-556-8730		

\* Attach Additional Sheets If Necessary

Remediation per OCD Rules & Guidelines. **SUBMIT REMEDIATION PROPOSAL NOT LATER THAN:**

November 10, 2012

2RP-1304

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

State of New Mexico  
Energy Minerals and Natural  
Resources Department

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

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

Incident ID	
District RP	2RP-1304
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-1304
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

### Location of Release Source

Latitude 32.248735 Longitude -103.918797  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Delaware "C" Tank Battery	Site Type Exploration and Production
Date Release Discovered 9/2/2012	API# (if applicable) 30-015-31412

Unit Letter	Section	Township	Range	County
G	6	24S	30E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 200 bbls	Volume Recovered (bbls) 5 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release

The truck load line valve was left open allowing the produced water to spill out onto the tank battery pad. The valve was closed upon discovery. Approximately 11,770 square feet of caliche pad and lease road, and approximately 7,060 square feet of pasture land was affected by the release. Free standing fluid was removed with a backhoe and the saturated soil on the caliche pad was scraped up and stockpiled on-site.



Incident ID	
District RP	2RP-1304
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?  The release volume was greater than 25 bbls.
If YES, was immediate notice given to the OCD? Yes, by Tony Savoie to Emergency Response #104 on 9/2/2012 at 12:19 p.m.	

## 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 Supervisor</u>
Signature: _____	Date: <u>3/20/2020</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	
District RP	2RP-1304
Facility ID	
Application ID	

## Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	
District RP	2RP-1304
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

email: Kyle\_Littrell@xtoenergy.com Telephone: (432)-221-7331

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	
District RP	2RP-1304
Facility ID	
Application ID	

## Closure

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

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: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

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

## Energy Minerals and Natural Resources

Revised August 8, 2011

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

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

## Release Notification and Corrective Action

JM/W 1228429248

## OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P. 260 737	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: Delaware "C" Tank Battery, same well pad as the PLU-153	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-31412
------------------------	------------------------	----------------------

## LOCATION OF RELEASE

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

Latitude N 32.248735 Longitude W 103.918797

## NATURE OF RELEASE

Type of Release: Crude oil and produced water	Volume of Release: 10 bbls crude oil and 20 bbls produced water	Volume Recovered: None
Source of Release: Produced water tank	Date and Hour of Occurrence: 8/18/12 at 4:00 p.m.	Date and Hour of Discovery: 8/18/12 4:00 p.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Late notification in person to Randy Dade	
By Whom?	Date and Hour: 8/20/12 8:30 a.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

**RECEIVED**

SEP 06 2012

**NMOCD ARTESIA**

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

The water transfer pumps failed causing the water tanks to over-flow, an equalizer line was opened within 20 minutes after the tanks started to spill over. This action stopped the spill until the pumps could be repaired.

Describe Area Affected and Cleanup Action Taken.\*

The 0 perm containment was being repaired at the time of the spill, the spill affected an area of approximately 900 sq. ft inside the containment area, and approximately 2000 sq. ft pasture area west of the tank battery. All of the impacted soil that could be removed around the tanks was hand excavated and placed on the pad area near the tank battery, approximately 40 cubic yards of soil was removed, the area was sampled and backfilled to allow for the containment to be re-built, and the liner installed. The area outside the containment will be remediated at a later date following the NMOCD guidelines for remediation.

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: Tony Savoie	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Tony Savoie	Approved by Environmental Specialist: Signed By Mike Benavides	
Title: Waste Management and Remediation Specialist	Approval Date: OCT 10 2012	Expiration Date:
E-mail Address: tasavoie@basspet.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 9/5/12	Phone: 432-556-8730	

\* Attach Additional Sheets If Necessary

Remediation per OCD Rules &  
Guidelines. **SUBMIT REMEDIATION  
PROPOSAL NOT LATER THAN:**  
November 10, 2012

2RP-1305

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

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

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

Incident ID	
District RP	2RP-1305
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-1305
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

### Location of Release Source

Latitude 32.248735 Longitude -103.918797  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Delaware "C" Tank Battery	Site Type Exploration and Production
Date Release Discovered 8/18/2012	API# (if applicable) 30-015-31412

Unit Letter	Section	Township	Range	County
G	6	24S	30E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 10 bbls	Volume Recovered (bbls) 0 bbls
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 20 bbls	Volume Recovered (bbls) 0 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release

The water transfer pumps failed causing the water tanks to overflow, an equalizer line was opened within 20 minutes after the tanks started to spill over. The release affected approximately 900 square feet inside the containment area and approximately 2,000 square feet of pasture area west of the tank battery. All of the impacted soil that could be removed around the tanks was excavated. The area was sampled and backfilled to allow for the containment to be re-built, and the liner installed.



Incident ID	
District RP	2RP-1305
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?  The release volume was greater than 25 bbls.
If YES, was immediate notice given to the OCD? No, late notification was given in person to Randy Dade on 8/20/2012 at 8:30 a.m.	

## 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 Supervisor</u>
Signature: _____	Date: <u>3/20/2020</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	
District RP	2RP-1305
Facility ID	
Application ID	

## Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	
District RP	2RP-1305
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

email: Kyle\_Littrell@xtoenergy.com Telephone: (432)-221-7331

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	
District RP	2RP-1305
Facility ID	
Application ID	

## Closure

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

email: Kyle\_Littrell@xtoenergy.com Telephone: 432-221-7331

### OCD Only

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

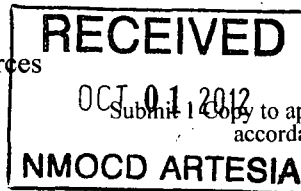
Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance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

Closure Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

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

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



Form C-141  
Revised August 8, 2011

### Release Notification and Corrective Action

nJM W 12311 29593

#### OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P. <b>260737</b>	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: Delaware "C" Tank Battery, same well pad as the PLU-153	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-31412
------------------------	------------------------	----------------------

#### LOCATION OF RELEASE

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

Latitude N 32.248735 Longitude W 103.918797

#### NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 650 bbls produced water	Volume Recovered: 0 bbls
Source of Release: 8" suction line to SWD H-pump	Date and Hour of Occurrence: 8/19/12 time approximately 12:00 a.m. 9/19/12	Date and Hour of Discovery: 8/19/12 2:00 a.m. 9/19/12
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Artesia NMOCD emergency #104 and Jim Amos with the BLM	
By Whom? Tony Savoie	Date and Hour: 8/19/12 at 8:52 a.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

A connection going from the charge pumps to the H-pump failed, the pumps were shut down upon discovery and the line was repaired the next morning.

Describe Area Affected and Cleanup Action Taken.\*

The area around the SWD battery, the road and pasture were impacted by the new release, the same areas involved had been impacted by recent releases at the same location. A rig is being scheduled to determine the vertical extent under the containment and all of the impacted areas. The spill will be remediated in accordance to the NMOCD recommended guidelines for spills.

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

Signature: <i>Tony Savoie</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Tony Savoie	Approved by Environmental Specialist Signed By <i>Mike Brandon</i>	
Title: Waste Management and Remediation Specialist	Approval Date: NOV 06 2012	Expiration Date:
E-mail Address: tasavoie@basspet.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 9/28/12	Phone: 432-556-8730	

\* Attach Additional Sheets If Necessary

Remediation per OCD Rules & Guidelines. **SUBMIT REMEDIATION PROPOSAL NOT LATER THAN:**

*December 6<sup>th</sup> 2012*

*2RP-1382*

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

State of New Mexico  
Energy Minerals and Natural  
Resources Department

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

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

Incident ID	
District RP	2RP-1383
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-1383
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

### Location of Release Source

Latitude 32.248735 Longitude -103.918797  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Delaware "C" Tank Battery	Site Type Exploration and Production
Date Release Discovered 9/19/2012	API# (if applicable) 30-015-31412

Unit Letter	Section	Township	Range	County
G	6	24S	30E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 650 bbls	Volume Recovered (bbls) 0 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release

A connection going from the charge pumps to the H-pump failed. The pumps were shut down upon discovery and the line was repaired. The area around the SWD battery, the road, and the pasture were impacted by the release.

Incident ID	
District RP	2RP-1383
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?  The release volume was greater than 25 bbls.
If YES, was immediate notice given to the OCD? Yes, by Tony Savoie to NMOCE Emergency Response #104 and Jim Amos (BLM) on 9/19/2012 at 8:52 a.m..	

## 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 Supervisor</u>
Signature: _____	Date: <u>3/20/2020</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	
District RP	2RP-1383
Facility ID	
Application ID	

## Site Assessment/Characterization

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

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

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

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

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

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



State of New Mexico  
Oil Conservation Division

Incident ID	
District RP	2RP-1383
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

email: Kyle\_Littrell@xtoenergy.com Telephone: (432)-221-7331

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	
District RP	2RP-1383
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 OCD District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

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: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

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

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

Form C-141  
Revised August 8, 2011

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

### Release Notification and Corrective Action

*nHMP1411828179*

Name of Company: BOPCO, L.P. <i>260737</i>		OPERATOR	<input checked="" type="checkbox"/> Initial Report	<input type="checkbox"/> Final Report
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220		Contact: Tony Savoie		
Facility Name: Delaware "C" Tank Battery, same well pad as the PLU-153		Telephone No. 575-887-7329		
		Facility Type: Exploration and Production		

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-31412
------------------------	------------------------	----------------------

### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	6	24S	30 E	1830	North	1980	East	Eddy

Latitude N 32.248866 Longitude W 103.919096

### NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 200 bbls	Volume Recovered: 15 bbls
Source of Release: 3" SWD injection line	Date and Hour of Occurrence: 4/21/14 time unknown	Date and Hour of Discovery: 4/21/14 at 12:30 p.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NMOCD emergency #104 and the BLM	
By Whom? Tony Savoie	Date and Hour: 4/21/14 at 2:30 p.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

A 3" high pressure fiberglass line coupling broke in the coupling threads. The connection was replaced.

Describe Area Affected and Cleanup Action Taken.\*

The spill impacted approximately 4000 sq.ft. of pad area at the SWD location, approximately 4200 sq.ft. of pasture area and approximately 1300 sq.ft. of lease road. The spill ponded and followed a spill path almost identical to a spill at the same pump location on 5/30/12 reference 2RP-1205. The SWD is scheduled to be dismantled and the oil production battery re-located this year. There are several open C-141's for this facility that will be addressed at the time the battery is re-located.

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

Signature: <i>Tony Savoie</i>		OIL CONSERVATION DIVISION	
Printed Name: Tony Savoie		Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Waste Management and Remediation Specialist		Approval Date: <i>4/28/14</i>	Expiration Date: <i>NA</i>
E-mail Address: <i>tasavoie@basspet.com</i>		Conditions of Approval:	
Date: 4/24/14	Phone: 432-556-8730	Remediation per OCD Rule & Guidelines, & like approval by BLM. <b>SUBMIT REMEDIATION PROPOSAL NO LATER THAN:</b>	
* Attach Additional Sheets If Necessary		Attached <input type="checkbox"/>	

**PROPOSAL NO LATER THAN:**

*5/28/14*

*2RP-2264*

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

State of New Mexico  
Energy Minerals and Natural  
Resources Department

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

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

Incident ID	
District RP	2RP-2264
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-2264
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

### Location of Release Source

Latitude 32.248866 Longitude -103.919096  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Delaware "C" Tank Battery	Site Type Exploration and Production
Date Release Discovered 4/21/2014	API# (if applicable) 30-015-31412

Unit Letter	Section	Township	Range	County
G	6	24S	30E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 200 bbls	Volume Recovered (bbls) 15 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release

A 3" high pressure fiberglass line coupling broke in the coupling threads. The connection was replaced. The release impacted approximately 4000 square feet of pad area, approximately 4200 square feet of pasture area, and approximately 1300 square feet of lease road. The release ponded and followed a spill path identical to a spill at the same pump location reference 2RP-1205. The SWD is scheduled to be dismantled, all open releases will be addressed at that time.

Incident ID	
District RP	2RP-2264
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?  The release volume was greater than 25 bbls.
If YES, was immediate notice given to the OCD? Yes, by Tony Savoie to NMOCD Emergency Response #104 and BLM on 4/21/2014 at 2:30 p.m.	

## 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 Supervisor</u>
Signature: _____	Date: <u>3/20/2020</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	
District RP	2RP-2264
Facility ID	
Application ID	

## Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	
District RP	2RP-2264
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

email: Kyle\_Littrell@xtoenergy.com Telephone: (432)-221-7331

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	
District RP	2RP-2264
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 OCD District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

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: \_\_\_\_\_ Date: \_\_\_\_\_


Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_





ATTACHMENT 2: LITHOLOGIC/SOIL SAMPLING LOGS

 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH08		8/20/2018				
		Site Name:		PLU Delaware C SWD				
		RP or Incident Number:		2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383				
		LTE Job Number:		2RP-2264				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: JH				
		Chloride, PID		Method:				
Hole Diameter:		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
dry	1	0.7			2'	0		Reddish brown clay with silt
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
12								


 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH09		8/20/2018				
		Site Name:		PLU Delaware C SWD				
		RP or Incident Number:		2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383				
		LTE Job Number:		2RP-2264				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: JH				
		Chloride, PID		Method:				
Hole Diameter:		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
dry	0.8	1.0			2'	0		Reddish brown clay with silt
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
12								


 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH10		8/20/2018				
		Site Name:		PLU Delaware C SWD				
		RP or Incident Number:		2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383				
		LTE Job Number:		2RP-2264				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: JH				
		Chloride, PID		Method:				
Hole Diameter:		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
dry	1.2	1.9			2'	0		Reddish brown clay with silt
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
12								


 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH11		8/20/2018				
		Site Name:		PLU Delaware C SWD				
		RP or Incident Number:		2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383				
		LTE Job Number:		2RP-2264				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: JH				
		Chloride, PID		Method:				
Hole Diameter:		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
dry	1.0	1.4			2'	0		Reddish brown clay with silt
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
12								


 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH12		8/20/2018				
		Site Name:		PLU Delaware C SWD				
		RP or Incident Number:		2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383				
		LTE Job Number:		2RP-2264				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: JH				
		Chloride, PID		Method:				
Hole Diameter:		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
dry	1.6	1.8			2'	0		Reddish brown clay with silt
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
12								



 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH13		8/20/2018				
		Site Name:		PLU Delaware C SWD				
		RP or Incident Number:		2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383				
		LTE Job Number:		2RP-2264				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: JH				
		Chloride, PID		Method:				
Hole Diameter:		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						0		
						1		
	7.2	1.5			2'	2		light tan, sandy loam with caliche
	6.2	0.8			3'	3		Same as above
	8.2	0.5			4'	4		Same as above
						5		
						6		
	5.2	0.4			7'	7		medium tan, sandy loam with caliche
						8		
						9		
	3.0	0.3			10'	10		Same as above
						11		
	1	0.5			12'	12		Medium tan sandy loam

 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH14		8/21/2018				
		Site Name: PLU Delaware C SWD						
		RP or Incident Number: 2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383						
		LTE Job Number:		2RP-2264				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: JH				
		Chloride, PID		Method:				
Hole Diameter:		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						0		
						1		
	2.6	2.7			2'	2		med. Brown silty sand loam
	1.8	2.8			3'	3		same as above
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH15		8/21/2018				
		Site Name: PLU Delaware C SWD						
		RP or Incident Number:		2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383				
		LTE Job Number:		2RP-2264				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: JH				
		Chloride, PID		Method:				
Hole Diameter:		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
	2	0.5			2'	0		reddish brown clay
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH16		8/21/2018				
		Site Name: PLU Delaware C SWD						
		RP or Incident Number:		2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383				
		LTE Job Number:		2RP-2264				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: JH				
		Chloride, PID		Method:				
Hole Diameter:		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
	1.0	0.4			2'	0		silt loam, sandy in parts
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		



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

Identifier:

PH 17

Date:

10-24-19

Project Name:

PLU Delaware C

RP Number: REP-

1205, 1304, 1305, 1303, 1204

## LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

PID

Chloride

Logged By: SL

Method: trackhoe

Hole Diameter:


Total Depth:

2'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1000	D	616	0.0	2	PH17	1	1	SP-3M
1010	D	493	0.0	2	PH17A	2	2	1-2 Sand, Brown, no odor, no stain, m-f, poorly graded trace silt
					3			TD @ 2'
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH108	Date: 10.24.19
		Project Name: PLU Delaware C	RP Number: 2RP 1205, 1304, 1305, 1383, 2264
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>			
Lat/Long:		Field Screening:	Logged By: SL Method: Trackhoe
Comments:		PH108 Chloride	Hole Diameter: Total Depth: 21

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
125	D	554	0.0	N				
				PH108	1	1	SP-SM	1-2 sand, brown, no odor, no stain, m-f, poorly graded trace silt
1430	D	554	0.0	N				
				PH108A	2	2		
TD @ 21								
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			





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

Identifier:

PH19

Date:

10.24.19

Project Name:

DLV Delaware C

RP Number: ZRP.

1205, 1304, 1305, 1383, 2264

**LITHOLOGIC / SOIL SAMPLING LOG**

Lat/Long:

Field Screening:

PID

Chloride

Logged By: SL

Method: Trackhoe


Hole Diameter:

Total Depth:


2'


Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1035	D	557	0.0	N	PH19	1	sp. sm	1-2 Sand, Brown no odor, in f. poorly graded, trace silt
1040	D	750	0.0	N	PH19A	2		
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			


		<b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH20		Date: 10.24.19		
				Project Name: PLU Delaware C		RP Number: ZRP 1205, 1304, 1305, 1303, 2264		
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: SL		Method: track hoe		
		PID Chloride		Hole Diameter:		Total Depth: 2'		
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1030 D	554	0.0	N	PH20	1	1	SP-SM	1-2 Sand, Brown, no odor, no stains, m-f, poorly graded trace silt
1455 D	342	0.0	N	PH20A	2	2		
					3			Top of 2'
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			




		<b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH 21		Date: 10-24-19		
				Project Name: PLU Delance C		RP Number: 2RP 1205, 1304, 1305, 1383, 2264		
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: SL		Method: Truckhoe		
Comments:		PHD Chloride		Hole Diameter:		Total Depth: 2'		
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
12.0	D 179	0.0	N	PH 21	1	1	SP-sym	102 Sand, Brown, no odor, no stain, m-f, poorly graded, trace silt
12.5	D 1075	0.0	N	PH 114	2	2		
					3			TD @ 2'
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

		<b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH22		Date: 10.24.19	
				Project Name: PW Delaware C		RP Number: 200 1205, 1304, 1305, 1303, 2204	
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>							
Lat/Long:		Field Screening:		Logged By: SL		Method: Trackhoe	
		PID Chloride		Hole Diameter:		Total Depth: 2'	
Comments:							
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type
					0		
0	342	0.0	N	PH22	1	1	SP-SM
0	150	0.0	N	PH22A	2	2	
Lithology/Remarks							
1-2 Sand, Brown, no odor, no stain m-f, poorly graded, trace silt							
TD @ 2'							
					3		
					4		
					5		
					6		
					7		
					8		
					9		
					10		
					11		
					12		



		<b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH23		Date: 10.24.19		
				Project Name: PLU Delaware C		RP Number: 2RP 1205, 1304, 1305, 1383, 2264		
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: SL		Method: Track hoe		
		PID Chloride		Hole Diameter:		Total Depth: 2'		
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
	991	0.0	N	PH23	0			
1245					1	1	SP-SM	1-2
1250	991	0.0	N	PH23A	2	2		sand, brown, no odor, no stain, m-f, poorly graded trace silt
					3			TD @ 2'
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

		<b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH24		Date: 10.24.19		
				Project Name: PLV Delaware C		RP Number: WAP 1205, 1304, 1305, 1383, 2264		
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: SL		Method: Truck hoe		
		<input checked="" type="checkbox"/> PID <input checked="" type="checkbox"/> Chloride		Hole Diameter:		Total Depth: 2'		
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1310 D	431	0.0	N	PH24	1	1	psm	1-2 Sand, Brown, no odor, no staining, m-f poorly graded trace silt
1320 D	252	0.0	N	PH24	2	2		
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

ATTACHMENT 3: PHOTOGRAPHIC LOGS





## PHOTOGRAPHIC LOG



**Photograph 1:** View of lease road leading to pad – looking east.



**Photograph 2:** View of pad and SWD tank battery – looking west



**Photograph 3:** View of well vegetated western pasture area.



**Photograph 4:** View of pad and SWD tank battery – looking south.

PLU DELAWARE C SWD BATTERY/DELAWARE C TANK BATTERY  
32.248850, -103.919067

ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS



# Analytical Report 575577

for  
LT Environmental, Inc.

Project Manager: Adrian Baker  
Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

18-DEC-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):  
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)  
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)  
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)  
Xenco-San Antonio (EPA Lab Code: TNi02385): Texas (T104704534-18-4)  
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)  
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)  
Xenco-Atlanta (LELAP Lab ID #04176)  
Xenco-Tampa: Florida (E87429)  
Xenco-Lakeland: Florida (E84098)



18-DEC-18

Project Manager: **Adrian Baker**

**LT Environmental, Inc.**

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **575577**

**Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264**

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) 575577. 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. 575577 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 575577****LT Environmental, Inc., Arvada, CO**

Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS1	S	02-06-18 15:56		575577-001
SS2	S	02-06-18 15:57		575577-002
SS3	S	02-06-18 15:59	6"	575577-003
SS4	S	02-06-18 16:01	6"	575577-004
SS5	S	02-06-18 16:02	6"	575577-005
SS6	S	02-06-18 16:04		575577-006
SS7	S	02-06-18 15:35	6"	575577-007





## CASE NARRATIVE

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

**Project Name:** Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Project ID:

Work Order Number(s): 575577

Report Date: 18-DEC-18

Date Received: 02/07/2018

---

### Sample receipt non conformances and comments:

---

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

None

#### Analytical non conformances and comments:

Batch: LBA-3040647 BTEX by EPA 8021B

Lab Sample ID 575577-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 575577-001, -002, -003, -004, -005, -007.

The Laboratory Control Sample for Toluene, Benzene, 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.

Batch: LBA-3040738 BTEX by EPA 8021B

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

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

Samples affected are: 575577-006.



# Certificate of Analysis Summary 575577

LT Environmental, Inc., Arvada, CO

Project Name: Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

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

Report Date: 18-DEC-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	575577-001	575577-002	575577-003	575577-004	575577-005	575577-006
	<i>Field Id:</i>	SS1	SS2	SS3	SS4	SS5	SS6
	<i>Depth:</i>			6"-	6"-	6"-	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-06-18 15:56	Feb-06-18 15:57	Feb-06-18 15:59	Feb-06-18 16:01	Feb-06-18 16:02	Feb-06-18 16:04
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Feb-07-18 14:10	Feb-07-18 14:10	Feb-07-18 14:10	Feb-07-18 14:10	Feb-07-18 14:10	Feb-08-18 08:45
	<i>Analyzed:</i>	Feb-08-18 07:22	Feb-08-18 07:42	Feb-08-18 08:01	Feb-08-18 08:20	Feb-08-18 08:39	Feb-12-18 12:11
	<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	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00355 0.00355
Toluene		<0.00198 0.00198	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00355 0.00355
Ethylbenzene		<0.00198 0.00198	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00355 0.00355
m,p-Xylenes		<0.00396 0.00396	<0.00404 0.00404	<0.00403 0.00403	<0.00402 0.00402	<0.00396 0.00396	<0.00709 0.00709
o-Xylene		<0.00198 0.00198	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00355 0.00355
Total Xylenes		<0.00198 0.00198	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00355 0.00355
Total BTEX		<0.00198 0.00198	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00355 0.00355
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Feb-13-18 15:00	Feb-13-18 15:00	Feb-13-18 15:00	Feb-13-18 15:00	Feb-13-18 15:00	Feb-13-18 15:00
	<i>Analyzed:</i>	Feb-13-18 19:46	Feb-13-18 19:53	Feb-13-18 20:14	Feb-13-18 20:21	Feb-13-18 20:28	Feb-13-18 20:35
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		2140 24.9	6270 49.8	23.2 4.93	<4.99 4.99	<4.99 4.99	<4.98 4.98
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Feb-07-18 09:00	Feb-07-18 09:00	Feb-07-18 09:00	Feb-07-18 09:00	Feb-07-18 09:00	Feb-07-18 09:00
	<i>Analyzed:</i>	Feb-07-18 16:00	Feb-07-18 16:40	Feb-07-18 16:59	Feb-07-18 17:19	Feb-07-18 17:39	Feb-07-18 17:59
	<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	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		58.1 15.0	25.2 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		37.3 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		95.4 15.0	25.2 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 - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

*Jessica Kramer*

Jessica Kramer  
Project Assistant





# Certificate of Analysis Summary 575577

LT Environmental, Inc., Arvada, CO

Project Name: Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

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

Report Date: 18-DEC-18

Project Manager: Jessica Kramer

<b>Analysis Requested</b>	<b>Lab Id:</b>	575577-007					
	<b>Field Id:</b>	SS7					
	<b>Depth:</b>	6"-					
	<b>Matrix:</b>	SOIL					
	<b>Sampled:</b>	Feb-06-18 15:35					
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Feb-07-18 14:10					
	<b>Analyzed:</b>	Feb-08-18 09:17					
	<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		<0.00401 0.00401					
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>	Feb-13-18 15:00					
	<b>Analyzed:</b>	Feb-13-18 20:42					
	<b>Units/RL:</b>	mg/kg RL					
Chloride		2260 24.9					
<b>TPH by SW8015 Mod</b>	<b>Extracted:</b>	Feb-07-18 09:00					
	<b>Analyzed:</b>	Feb-07-18 18:19					
	<b>Units/RL:</b>	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9					
Diesel Range Organics (DRO)		1840 14.9					
Motor Oil Range Hydrocarbons (MRO)		410 14.9					
Total TPH		2250 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. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

*Jessica Kramer*

Jessica Kramer  
Project Assistant



# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS1** Matrix: **Soil** Date Received: 02.07.18 08.00  
 Lab Sample Id: 575577-001 Date Collected: 02.06.18 15.56

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: JUM % Moisture:  
 Analyst: JUM Date Prep: 02.13.18 15.00 Basis: Wet Weight  
 Seq Number: 3040997

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2140	24.9	mg/kg	02.13.18 19.46		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 02.07.18 09.00 Basis: Wet Weight  
 Seq Number: 3040461

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.18 16.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	58.1	15.0	mg/kg	02.07.18 16.00		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	37.3	15.0	mg/kg	02.07.18 16.00		1
Total TPH	PHC635	95.4	15.0	mg/kg	02.07.18 16.00		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	02.07.18 16.00	
o-Terphenyl	84-15-1	100	%	70-135	02.07.18 16.00	



# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS1**  
 Lab Sample Id: 575577-001

Matrix: **Soil**  
 Date Collected: 02.06.18 15.56

Date Received: 02.07.18 08.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: **ALJ**

% Moisture:

Analyst: **ALJ**

Date Prep: 02.07.18 14.10

Basis: **Wet Weight**

Seq Number: 3040647

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.08.18 07.22	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.08.18 07.22	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.08.18 07.22	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	02.08.18 07.22	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.08.18 07.22	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.08.18 07.22	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.08.18 07.22	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	02.08.18 07.22		
4-Bromofluorobenzene	460-00-4	92	%	80-120	02.08.18 07.22		



# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS2** Matrix: Soil Date Received: 02.07.18 08.00  
 Lab Sample Id: 575577-002 Date Collected: 02.06.18 15.57

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: JUM % Moisture:  
 Analyst: JUM Date Prep: 02.13.18 15.00 Basis: Wet Weight  
 Seq Number: 3040997

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>6270</b>	49.8	mg/kg	02.13.18 19.53		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 02.07.18 09.00 Basis: Wet Weight  
 Seq Number: 3040461

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.18 16.40	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>25.2</b>	15.0	mg/kg	02.07.18 16.40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.07.18 16.40	U	1
<b>Total TPH</b>	PHC635	<b>25.2</b>	15.0	mg/kg	02.07.18 16.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	02.07.18 16.40	
o-Terphenyl	84-15-1	90	%	70-135	02.07.18 16.40	



# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS2**  
 Lab Sample Id: 575577-002

Matrix: **Soil**  
 Date Collected: 02.06.18 15.57

Date Received: 02.07.18 08.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: **ALJ**

% Moisture:

Analyst: **ALJ**

Date Prep: 02.07.18 14.10

Basis: **Wet Weight**

Seq Number: 3040647

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.08.18 07.42	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.08.18 07.42	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.08.18 07.42	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	02.08.18 07.42	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.08.18 07.42	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.08.18 07.42	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.08.18 07.42	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	97	%	80-120	02.08.18 07.42		
1,4-Difluorobenzene	540-36-3	85	%	80-120	02.08.18 07.42		



# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: <b>SS3</b>	Matrix: <b>Soil</b>	Date Received: 02.07.18 08.00
Lab Sample Id: 575577-003	Date Collected: 02.06.18 15.59	Sample Depth: 6"
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: <b>JUM</b>		% Moisture:
Analyst: <b>JUM</b>	Date Prep: 02.13.18 15.00	Basis: <b>Wet Weight</b>
Seq Number: 3040997		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23.2	4.93	mg/kg	02.13.18 20.14		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: <b>ARM</b>	% Moisture:
Analyst: <b>ARM</b>	Date Prep: 02.07.18 09.00
Seq Number: 3040461	Basis: <b>Wet Weight</b>

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.18 16.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.07.18 16.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.07.18 16.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.07.18 16.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	02.07.18 16.59	
o-Terphenyl	84-15-1	96	%	70-135	02.07.18 16.59	



# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS3** Matrix: **Soil** Date Received: 02.07.18 08.00  
 Lab Sample Id: 575577-003 Date Collected: 02.06.18 15.59 Sample Depth: 6"  
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B  
 Tech: **ALJ** % Moisture:  
 Analyst: **ALJ** Date Prep: 02.07.18 14.10 Basis: **Wet Weight**  
 Seq Number: 3040647

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.08.18 08.01	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.08.18 08.01	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.08.18 08.01	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.08.18 08.01	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.08.18 08.01	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.08.18 08.01	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.08.18 08.01	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	02.08.18 08.01		
4-Bromofluorobenzene	460-00-4	98	%	80-120	02.08.18 08.01		





# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS4** Matrix: Soil Date Received: 02.07.18 08.00  
 Lab Sample Id: 575577-004 Date Collected: 02.06.18 16.01 Sample Depth: 6"  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: JUM % Moisture:  
 Analyst: JUM Date Prep: 02.13.18 15.00 Basis: Wet Weight  
 Seq Number: 3040997

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	02.13.18 20.21	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 02.07.18 09.00 Basis: Wet Weight  
 Seq Number: 3040461

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.18 17.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.07.18 17.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.07.18 17.19	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.07.18 17.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	02.07.18 17.19	
o-Terphenyl	84-15-1	92	%	70-135	02.07.18 17.19	



# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS4**  
 Lab Sample Id: 575577-004

Matrix: Soil  
 Date Collected: 02.06.18 16.01

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: 02.07.18 14.10

Basis: Wet Weight

Seq Number: 3040647

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.08.18 08.20	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.08.18 08.20	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.08.18 08.20	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.08.18 08.20	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.08.18 08.20	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.08.18 08.20	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.08.18 08.20	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	%	80-120	02.08.18 08.20		
1,4-Difluorobenzene	540-36-3	89	%	80-120	02.08.18 08.20		



# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: <b>SS5</b>	Matrix: <b>Soil</b>	Date Received: 02.07.18 08.00
Lab Sample Id: 575577-005	Date Collected: 02.06.18 16.02	Sample Depth: 6"
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: <b>JUM</b>		% Moisture:
Analyst: <b>JUM</b>	Date Prep: 02.13.18 15.00	Basis: <b>Wet Weight</b>
Seq Number: 3040997		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	02.13.18 20.28	U	1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: <b>ARM</b>	% Moisture:
Analyst: <b>ARM</b>	Date Prep: 02.07.18 09.00
Seq Number: 3040461	Basis: <b>Wet Weight</b>

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.18 17.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.07.18 17.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.07.18 17.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.07.18 17.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	02.07.18 17.39	
o-Terphenyl	84-15-1	90	%	70-135	02.07.18 17.39	



# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS5**  
 Lab Sample Id: 575577-005

Matrix: **Soil**  
 Date Collected: 02.06.18 16.02

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: 02.07.18 14.10

Basis: **Wet Weight**

Seq Number: 3040647

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.08.18 08.39	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.08.18 08.39	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.08.18 08.39	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	02.08.18 08.39	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.08.18 08.39	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.08.18 08.39	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.08.18 08.39	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	97	%	80-120	02.08.18 08.39		
1,4-Difluorobenzene	540-36-3	86	%	80-120	02.08.18 08.39		



# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS6** Matrix: **Soil** Date Received: 02.07.18 08.00  
 Lab Sample Id: 575577-006 Date Collected: 02.06.18 16.04

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: JUM % Moisture:  
 Analyst: JUM Date Prep: 02.13.18 15.00 Basis: Wet Weight  
 Seq Number: 3040997

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	02.13.18 20.35	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 02.07.18 09.00 Basis: Wet Weight  
 Seq Number: 3040461

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.18 17.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.07.18 17.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.07.18 17.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.07.18 17.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	02.07.18 17.59	
o-Terphenyl	84-15-1	90	%	70-135	02.07.18 17.59	



# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS6**  
 Lab Sample Id: 575577-006

Matrix: Soil  
 Date Collected: 02.06.18 16.04

Date Received: 02.07.18 08.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.08.18 08.45

Basis: Wet Weight

Seq Number: 3040738

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00355	0.00355	mg/kg	02.12.18 12.11	U	1
Toluene	108-88-3	<0.00355	0.00355	mg/kg	02.12.18 12.11	U	1
Ethylbenzene	100-41-4	<0.00355	0.00355	mg/kg	02.12.18 12.11	U	1
m,p-Xylenes	179601-23-1	<0.00709	0.00709	mg/kg	02.12.18 12.11	U	1
o-Xylene	95-47-6	<0.00355	0.00355	mg/kg	02.12.18 12.11	U	1
Total Xylenes	1330-20-7	<0.00355	0.00355	mg/kg	02.12.18 12.11	U	1
Total BTEX		<0.00355	0.00355	mg/kg	02.12.18 12.11	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	78	%	80-120	02.12.18 12.11	**	
1,4-Difluorobenzene	540-36-3	81	%	80-120	02.12.18 12.11		



# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS7** Matrix: Soil Date Received: 02.07.18 08.00  
 Lab Sample Id: 575577-007 Date Collected: 02.06.18 15.35 Sample Depth: 6"  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: JUM % Moisture:  
 Analyst: JUM Date Prep: 02.13.18 15.00 Basis: Wet Weight  
 Seq Number: 3040997

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2260	24.9	mg/kg	02.13.18 20.42		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 02.07.18 09.00 Basis: Wet Weight  
 Seq Number: 3040461

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.07.18 18.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	1840	14.9	mg/kg	02.07.18 18.19		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	410	14.9	mg/kg	02.07.18 18.19		1
Total TPH	PHC635	2250	14.9	mg/kg	02.07.18 18.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.07.18 18.19	
o-Terphenyl	84-15-1	117	%	70-135	02.07.18 18.19	





# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS7**  
 Lab Sample Id: 575577-007

Matrix: Soil  
 Date Collected: 02.06.18 15.35

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: 02.07.18 14.10

Basis: Wet Weight

Seq Number: 3040647

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.08.18 09.17	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.08.18 09.17	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.08.18 09.17	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.08.18 09.17	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.08.18 09.17	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.08.18 09.17	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.08.18 09.17	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	85	%	80-120	02.08.18 09.17		
4-Bromofluorobenzene	460-00-4	94	%	80-120	02.08.18 09.17		



## Flagging Criteria



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

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



## LT Environmental, Inc.

Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040997

Matrix: Solid

Prep Method: E300P

MB Sample Id: 7639086-1-BLK

LCS Sample Id: 7639086-1-BKS

Date Prep: 02.13.18

LCSD Sample Id: 7639086-1-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	271	108	90-110	1	20	mg/kg	02.13.18 18:57	

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040997

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 575576-004

MS Sample Id: 575576-004 S

Date Prep: 02.13.18

MSD Sample Id: 575576-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	23.6	250	296	109	310	115	90-110	5	20	mg/kg	02.13.18 19:18	X

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040997

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 575578-001

MS Sample Id: 575578-001 S

Date Prep: 02.13.18

MSD Sample Id: 575578-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	701	249	940	96	960	104	90-110	2	20	mg/kg	02.13.18 20:56	

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3040461

Matrix: Solid

Prep Method: TX1005P

MB Sample Id: 7638719-1-BLK

LCS Sample Id: 7638719-1-BKS

Date Prep: 02.07.18

LCSD Sample Id: 7638719-1-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	972	97	1090	109	70-135	11	35	mg/kg	02.07.18 09:31	
Diesel Range Organics (DRO)	<8.13	1000	1100	110	1150	115	70-135	4	35	mg/kg	02.07.18 09:31	

## Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		109		129		70-135	%	02.07.18 09:31
o-Terphenyl	111		107		114		70-135	%	02.07.18 09:31

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.

Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3040461

Parent Sample Id: 575430-001

Matrix: Soil

MS Sample Id: 575430-001 S

Prep Method: TX1005P

Date Prep: 02.07.18

MSD Sample Id: 575430-001 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)	<7.99	998	974	98	1090	109	70-135	11	35	mg/kg	02.07.18 10:34	
Diesel Range Organics (DRO)	14.4	998	1000	99	1120	111	70-135	11	35	mg/kg	02.07.18 10:34	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		118		70-135	%	02.07.18 10:34
o-Terphenyl	112		100		70-135	%	02.07.18 10:34

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3040647

MB Sample Id: 7638867-1-BLK

Matrix: Solid

LCS Sample Id: 7638867-1-BKS

Prep Method: SW5030B

Date Prep: 02.07.18

LCSD Sample Id: 7638867-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0789	78	0.0706	71	70-130	11	35	mg/kg	02.07.18 23:07	
Toluene	<0.00202	0.101	0.0831	82	0.0737	74	70-130	12	35	mg/kg	02.07.18 23:07	
Ethylbenzene	<0.00202	0.101	0.0937	93	0.0851	85	71-129	10	35	mg/kg	02.07.18 23:07	
m,p-Xylenes	<0.00403	0.202	0.184	91	0.168	84	70-135	9	35	mg/kg	02.07.18 23:07	
o-Xylene	<0.00202	0.101	0.0921	91	0.0858	86	71-133	7	35	mg/kg	02.07.18 23:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		90		90		80-120	%	02.07.18 23:07
4-Bromofluorobenzene	102		102		112		80-120	%	02.07.18 23:07

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3040738

MB Sample Id: 7638875-1-BLK

Matrix: Solid

LCS Sample Id: 7638875-1-BKS

Prep Method: SW5030B

Date Prep: 02.08.18

LCSD Sample Id: 7638875-1-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	0.0821	83	0.0760	76	70-130	8	35	mg/kg	02.12.18 12:11	
Toluene	<0.00199	0.0994	0.0844	85	0.0813	81	70-130	4	35	mg/kg	02.12.18 12:11	
Ethylbenzene	<0.00199	0.0994	0.0895	90	0.0861	86	71-129	4	35	mg/kg	02.12.18 12:11	
m,p-Xylenes	<0.00398	0.199	0.174	87	0.167	84	70-135	4	35	mg/kg	02.12.18 12:11	
o-Xylene	<0.00199	0.0994	0.0884	89	0.0855	86	71-133	3	35	mg/kg	02.12.18 12:11	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		95		93		80-120	%	02.12.18 12:11
4-Bromofluorobenzene	98		102		99		80-120	%	02.12.18 12:11

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.

Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3040647

Parent Sample Id: 575577-001

Matrix: Soil

MS Sample Id: 575577-001 S

Prep Method: SW5030B

Date Prep: 02.07.18

MSD Sample Id: 575577-001 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	0.0998	0.0703	70	0.0632	63	70-130	11	35	mg/kg	02.07.18 23:45	X
Toluene	<0.00200	0.0998	0.0700	70	0.0624	62	70-130	11	35	mg/kg	02.07.18 23:45	X
Ethylbenzene	<0.00200	0.0998	0.0719	72	0.0618	62	71-129	15	35	mg/kg	02.07.18 23:45	X
m,p-Xylenes	<0.00399	0.200	0.139	70	0.119	59	70-135	16	35	mg/kg	02.07.18 23:45	X
o-Xylene	<0.00200	0.0998	0.0724	73	0.0629	63	71-133	14	35	mg/kg	02.07.18 23:45	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		87		80-120	%	02.07.18 23:45
4-Bromofluorobenzene	106		99		80-120	%	02.07.18 23:45

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3040738

Parent Sample Id: 575578-002

Matrix: Soil

MS Sample Id: 575578-002 S

Prep Method: SW5030B

Date Prep: 02.08.18

MSD Sample Id: 575578-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.103	102	0.125	125	70-130	19	35	mg/kg	02.12.18 12:11	
Toluene	<0.00202	0.101	0.0648	64	0.0677	68	70-130	4	35	mg/kg	02.12.18 12:11	X
Ethylbenzene	<0.00202	0.101	0.0603	60	0.0673	67	71-129	11	35	mg/kg	02.12.18 12:11	X
m,p-Xylenes	<0.00404	0.202	0.117	58	0.131	65	70-135	11	35	mg/kg	02.12.18 12:11	X
o-Xylene	<0.00202	0.101	0.0605	60	0.0674	67	71-133	11	35	mg/kg	02.12.18 12:11	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		96		80-120	%	02.12.18 12:11
4-Bromofluorobenzene	106		100		80-120	%	02.12.18 12:11

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, TX (281) 240-4222  
Dallas, TX (214) 902-0300

El Paso, TX (915) 585-3443  
Lubbock, TX (806) 794-1290

San Antonio, TX (210) 509-3334

Phoenix, AZ (480) 355-0900  
Service Center - Baton Rouge

Service Center- Amarillo, TX (806)678-4514  
Service Center- Hobbs, NM (575) 392-7550

# CHAIN OF CUSTODY

Page 1 Of 1

Revision 2016.1

[illegible]

# Analytical Report 596449

for  
**LT Environmental, Inc.**

**Project Manager: Adrian Baker**

**PLU Deleware C SWD**

**27-AUG-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-AUG-18

Project Manager: **Adrian Baker**

**LT Environmental, Inc.**

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **596449**

**PLU Delaware C SWD**

Project Address: NM. Eddy 2RP-1305,1383 1304

**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) 596449. 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. 596449 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 596449****LT Environmental, Inc., Arvada, CO**

PLU Deleware C SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	08-17-18 10:15	14 ft	596449-001
BH02	S	08-17-18 11:30	5.5 ft	596449-002
BH03	S	08-17-18 11:45	4 ft	596449-003
BH04	S	08-17-18 12:15	9.5 ft	596449-004
BH05	S	08-17-18 13:50	6 ft	596449-005
BH06	S	08-17-18 15:00	9 ft	596449-006
BH07	S	08-17-18 16:10	12 ft	596449-007



## CASE NARRATIVE

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

**Project Name:** *PLU Deleware C SWD*

Project ID:

Work Order Number(s): 596449

Report Date: 27-AUG-18

Date Received: 08/21/2018

---

**Sample receipt non conformances and comments:**

None

---

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

None

**Analytical non conformances and comments:**

Batch: LBA-3061313 BTEX by EPA 8021B

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



# Certificate of Analysis Summary 596449

LT Environmental, Inc., Arvada, CO

Project Name: PLU Deleware C SWD

Project Id:

Contact: Adrian Baker

Project Location: NM. Eddy 2RP-1305,1383 1304

Date Received in Lab: Tue Aug-21-18 10:35 am

Report Date: 27-AUG-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	596449-001	596449-002	596449-003	596449-004	596449-005	596449-006
	<i>Field Id:</i>	BH01	BH02	BH03	BH04	BH05	BH06
	<i>Depth:</i>	14- ft	5.5- ft	4- ft	9.5- ft	6- ft	9- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-17-18 10:15	Aug-17-18 11:30	Aug-17-18 11:45	Aug-17-18 12:15	Aug-17-18 13:50	Aug-17-18 15:00
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Aug-25-18 10:30	Aug-25-18 10:30	Aug-25-18 10:30	Aug-25-18 10:30	Aug-25-18 10:30	Aug-25-18 10:30
	<i>Analyzed:</i>	Aug-26-18 10:04	Aug-26-18 10:25	Aug-26-18 10:46	Aug-26-18 11:07	Aug-26-18 12:10	Aug-26-18 12:31
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00401 0.00401	<0.00399 0.00399	<0.00402 0.00402	<0.00400 0.00400
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Aug-21-18 17:30	Aug-21-18 17:30	Aug-21-18 17:30	Aug-21-18 17:30	Aug-21-18 17:30	Aug-21-18 17:30
	<i>Analyzed:</i>	Aug-21-18 21:57	Aug-21-18 22:02	Aug-21-18 22:19	Aug-21-18 22:24	Aug-21-18 22:40	Aug-21-18 22:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		77.2 4.96	74.4 4.96	51.7 4.96	188 4.96	172 4.95	71.6 4.99
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Aug-21-18 16:00	Aug-21-18 16:00	Aug-21-18 16:00	Aug-21-18 16:00	Aug-21-18 16:00	Aug-21-18 16:00
	<i>Analyzed:</i>	Aug-21-18 23:13	Aug-21-18 23:33	Aug-21-18 23:52	Aug-22-18 00:52	Aug-22-18 01:11	Aug-22-18 01:31
	<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	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<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 596449

LT Environmental, Inc., Arvada, CO

Project Name: PLU Deleware C SWD



Project Id:

Contact: Adrian Baker

Project Location: NM. Eddy 2RP-1305,1383 1304

Date Received in Lab: Tue Aug-21-18 10:35 am

Report Date: 27-AUG-18

Project Manager: Jessica Kramer

<b>Analysis Requested</b>	<b>Lab Id:</b>	596449-007					
	<b>Field Id:</b>	BH07					
	<b>Depth:</b>	12- ft					
	<b>Matrix:</b>	SOIL					
	<b>Sampled:</b>	Aug-17-18 16:10					
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Aug-25-18 10:30					
	<b>Analyzed:</b>	Aug-26-18 12:52					
	<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		<0.00401 0.00401					
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>	Aug-21-18 17:30					
	<b>Analyzed:</b>	Aug-21-18 22:51					
	<b>Units/RL:</b>	mg/kg RL					
Chloride		2550 24.9					
<b>TPH by SW8015 Mod</b>	<b>Extracted:</b>	Aug-21-18 16:00					
	<b>Analyzed:</b>	Aug-22-18 01:50					
	<b>Units/RL:</b>	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9					
Diesel Range Organics (DRO)		<14.9 14.9					
Oil Range Hydrocarbons (ORO)		<14.9 14.9					
Total TPH		<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. 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 Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

## PLU Deleware C SWD

Sample Id: **BH01**  
Lab Sample Id: 596449-001

Matrix: Soil  
Date Collected: 08.17.18 10.15

Date Received: 08.21.18 10.35  
Sample Depth: 14 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060822

Date Prep: 08.21.18 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	77.2	4.96	mg/kg	08.21.18 21.57		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3060852

Date Prep: 08.21.18 16.00

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	08.21.18 23.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.21.18 23.13	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.21.18 23.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.21.18 23.13	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>	
1-Chlorooctane	111-85-3	92	%	70-135	08.21.18 23.13		
o-Terphenyl	84-15-1	90	%	70-135	08.21.18 23.13		



# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH01**  
Lab Sample Id: 596449-001

Matrix: Soil  
Date Collected: 08.17.18 10.15

Date Received: 08.21.18 10.35  
Sample Depth: 14 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.26.18 10.04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.26.18 10.04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.26.18 10.04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.26.18 10.04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.26.18 10.04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.26.18 10.04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.26.18 10.04	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	101		%	70-130	08.26.18 10.04	
1,4-Difluorobenzene	540-36-3	102		%	70-130	08.26.18 10.04	





# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Deleware C SWD

Sample Id: **BH02** Matrix: Soil Date Received: 08.21.18 10.35  
 Lab Sample Id: 596449-002 Date Collected: 08.17.18 11.30 Sample Depth: 5.5 ft  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: SCM % Moisture:  
 Analyst: SCM Date Prep: 08.21.18 17.30 Basis: Wet Weight  
 Seq Number: 3060822

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	74.4	4.96	mg/kg	08.21.18 22.02		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 08.21.18 16.00 Basis: Wet Weight  
 Seq Number: 3060852

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.21.18 23.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.21.18 23.33	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.21.18 23.33	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.21.18 23.33	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	93	%	70-135	08.21.18 23.33		
o-Terphenyl	84-15-1	90	%	70-135	08.21.18 23.33		



## Certificate of Analytical Results 596449

## LT Environmental, Inc., Arvada, CO

## PLU Delaware C SWD

Sample Id: **BH02**  
 Lab Sample Id: 596449-002

Matrix: Soil  
 Date Collected: 08.17.18 11.30

Date Received: 08.21.18 10.35  
 Sample Depth: 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.26.18 10.25	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.26.18 10.25	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.26.18 10.25	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.26.18 10.25	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.26.18 10.25	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.26.18 10.25	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.26.18 10.25	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>	
4-Bromofluorobenzene	460-00-4	104	%	70-130	08.26.18 10.25		
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.26.18 10.25		



# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Deleware C SWD

Sample Id: **BH03**  
Lab Sample Id: 596449-003

Matrix: Soil  
Date Collected: 08.17.18 11.45

Date Received: 08.21.18 10.35  
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060822

Date Prep: 08.21.18 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	51.7	4.96	mg/kg	08.21.18 22.19		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3060852

Date Prep: 08.21.18 16.00

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	08.21.18 23.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.21.18 23.52	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.21.18 23.52	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.21.18 23.52	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	89	%	70-135	08.21.18 23.52		
o-Terphenyl	84-15-1	86	%	70-135	08.21.18 23.52		



# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH03**  
Lab Sample Id: 596449-003

Matrix: Soil  
Date Collected: 08.17.18 11.45

Date Received: 08.21.18 10.35  
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.26.18 10.46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.26.18 10.46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.26.18 10.46	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.26.18 10.46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.26.18 10.46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.26.18 10.46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.26.18 10.46	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110		%	70-130	08.26.18 10.46	
4-Bromofluorobenzene	460-00-4	103		%	70-130	08.26.18 10.46	



# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Deleware C SWD

Sample Id: **BH04**  
Lab Sample Id: 596449-004

Matrix: Soil  
Date Collected: 08.17.18 12.15

Date Received: 08.21.18 10.35  
Sample Depth: 9.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060822

Date Prep: 08.21.18 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	188	4.96	mg/kg	08.21.18 22.24		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3060852

Date Prep: 08.21.18 16.00

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	08.22.18 00.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.22.18 00.52	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.22.18 00.52	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.22.18 00.52	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	89	%	70-135	08.22.18 00.52		
o-Terphenyl	84-15-1	86	%	70-135	08.22.18 00.52		



## Certificate of Analytical Results 596449

## LT Environmental, Inc., Arvada, CO

## PLU Delaware C SWD

Sample Id: **BH04**  
 Lab Sample Id: 596449-004

Matrix: Soil  
 Date Collected: 08.17.18 12.15

Date Received: 08.21.18 10.35  
 Sample Depth: 9.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.26.18 11.07	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.26.18 11.07	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.26.18 11.07	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.26.18 11.07	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.26.18 11.07	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.26.18 11.07	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.26.18 11.07	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	107	%	70-130	08.26.18 11.07		
4-Bromofluorobenzene	460-00-4	103	%	70-130	08.26.18 11.07		





# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Deleware C SWD

Sample Id: **BH05**  
Lab Sample Id: 596449-005

Matrix: Soil  
Date Collected: 08.17.18 13.50

Date Received: 08.21.18 10.35  
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060822

Date Prep: 08.21.18 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	172	4.95	mg/kg	08.21.18 22.40		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3060852

Date Prep: 08.21.18 16.00

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	08.22.18 01.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.22.18 01.11	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.22.18 01.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.22.18 01.11	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-Chlorooctane	111-85-3	90	%	70-135	08.22.18 01.11		
o-Terphenyl	84-15-1	87	%	70-135	08.22.18 01.11		



## Certificate of Analytical Results 596449

## LT Environmental, Inc., Arvada, CO

## PLU Deleware C SWD

Sample Id: **BH05**  
 Lab Sample Id: 596449-005

Matrix: Soil  
 Date Collected: 08.17.18 13.50

Date Received: 08.21.18 10.35  
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.26.18 12.10	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.26.18 12.10	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.26.18 12.10	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.26.18 12.10	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.26.18 12.10	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.26.18 12.10	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.26.18 12.10	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	101	%	70-130	08.26.18 12.10		
4-Bromofluorobenzene	460-00-4	100	%	70-130	08.26.18 12.10		



# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Deleware C SWD

Sample Id: **BH06**  
Lab Sample Id: 596449-006

Matrix: Soil  
Date Collected: 08.17.18 15.00

Date Received: 08.21.18 10.35  
Sample Depth: 9 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060822

Date Prep: 08.21.18 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	71.6	4.99	mg/kg	08.21.18 22.46		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3060852

Date Prep: 08.21.18 16.00

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	08.22.18 01.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.22.18 01.31	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.22.18 01.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.22.18 01.31	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-Chlorooctane	111-85-3	90	%	70-135	08.22.18 01.31		
o-Terphenyl	84-15-1	85	%	70-135	08.22.18 01.31		



## Certificate of Analytical Results 596449

## LT Environmental, Inc., Arvada, CO

## PLU Delaware C SWD

Sample Id: **BH06**  
 Lab Sample Id: 596449-006

Matrix: Soil  
 Date Collected: 08.17.18 15.00

Date Received: 08.21.18 10.35  
 Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.26.18 12.31	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.26.18 12.31	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.26.18 12.31	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.26.18 12.31	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.26.18 12.31	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.26.18 12.31	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.26.18 12.31	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99		%	70-130	08.26.18 12.31	
1,4-Difluorobenzene	540-36-3	98		%	70-130	08.26.18 12.31	



# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Deleware C SWD

Sample Id: **BH07**  
Lab Sample Id: 596449-007

Matrix: Soil  
Date Collected: 08.17.18 16.10

Date Received: 08.21.18 10.35  
Sample Depth: 12 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060822

Date Prep: 08.21.18 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2550	24.9	mg/kg	08.21.18 22.51		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3060852

Date Prep: 08.21.18 16.00

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	08.22.18 01.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	08.22.18 01.50	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.22.18 01.50	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	08.22.18 01.50	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-Chlorooctane	111-85-3	90	%	70-135	08.22.18 01.50		
o-Terphenyl	84-15-1	88	%	70-135	08.22.18 01.50		



## Certificate of Analytical Results 596449

## LT Environmental, Inc., Arvada, CO

## PLU Deleware C SWD

Sample Id: **BH07**  
 Lab Sample Id: 596449-007

Matrix: Soil  
 Date Collected: 08.17.18 16.10

Date Received: 08.21.18 10.35  
 Sample Depth: 12 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.26.18 12.52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.26.18 12.52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.26.18 12.52	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.26.18 12.52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.26.18 12.52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.26.18 12.52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.26.18 12.52	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	92	%	70-130	08.26.18 12.52		
4-Bromofluorobenzene	460-00-4	75	%	70-130	08.26.18 12.52		





## Flagging Criteria



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

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



**LT Environmental, Inc.**  
PLU Deleware C SWD

**Analytical Method:** Inorganic Anions by EPA 300

Seq Number: 3060822

MB Sample Id: 7660857-1-BLK

Matrix: Solid

LCS Sample Id: 7660857-1-BKS

Prep Method: E300P

Date Prep: 08.21.18

LCSD Sample Id: 7660857-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	250	100	249	100	90-110	0	20	mg/kg	08.21.18 20:35	

**Analytical Method:** Inorganic Anions by EPA 300

Seq Number: 3060822

Parent Sample Id: 596446-008

Matrix: Soil

MS Sample Id: 596446-008 S

Prep Method: E300P

Date Prep: 08.21.18

MSD Sample Id: 596446-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	351	250	584	93	586	94	90-110	0	20	mg/kg	08.21.18 20:51	

**Analytical Method:** Inorganic Anions by EPA 300

Seq Number: 3060822

Parent Sample Id: 596449-002

Matrix: Soil

MS Sample Id: 596449-002 S

Prep Method: E300P

Date Prep: 08.21.18

MSD Sample Id: 596449-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	74.4	248	325	101	324	101	90-110	0	20	mg/kg	08.21.18 22:08	

**Analytical Method:** TPH by SW8015 Mod

Seq Number: 3060852

MB Sample Id: 7660865-1-BLK

Matrix: Solid

LCS Sample Id: 7660865-1-BKS

Prep Method: TX1005P

Date Prep: 08.21.18

LCSD Sample Id: 7660865-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	984	98	1000	100	70-135	2	20	mg/kg	08.21.18 19:38	
Diesel Range Organics (DRO)	<15.0	1000	989	99	1000	100	70-135	1	20	mg/kg	08.21.18 19:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		119		121		70-135	%	08.21.18 19:38
o-Terphenyl	95		102		102		70-135	%	08.21.18 19:38

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 Deleware C SWD

**Analytical Method:** TPH by SW8015 Mod

Seq Number: 3060852

Parent Sample Id: 596317-009

Matrix: Soil

MS Sample Id: 596317-009 S

Prep Method: TX1005P

Date Prep: 08.21.18

MSD Sample Id: 596317-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1000	100	995	100	70-135	1	20	mg/kg	08.22.18 06:58	
Diesel Range Organics (DRO)	<15.0	1000	1030	103	1010	101	70-135	2	20	mg/kg	08.22.18 06:58	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		125		70-135	%	08.22.18 06:58
o-Terphenyl	102		102		70-135	%	08.22.18 06:58

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061313

MB Sample Id: 7661181-1-BLK

Matrix: Solid

LCS Sample Id: 7661181-1-BKS

Prep Method: SW5030B

Date Prep: 08.25.18

LCSD Sample Id: 7661181-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0935	94	0.101	100	70-130	8	35	mg/kg	08.26.18 02:22	
Toluene	<0.00200	0.100	0.0863	86	0.0948	94	70-130	9	35	mg/kg	08.26.18 02:22	
Ethylbenzene	<0.00200	0.100	0.0976	98	0.104	103	70-130	6	35	mg/kg	08.26.18 02:22	
m,p-Xylenes	<0.00401	0.200	0.217	109	0.233	116	70-130	7	35	mg/kg	08.26.18 02:22	
o-Xylene	<0.00200	0.100	0.106	106	0.114	113	70-130	7	35	mg/kg	08.26.18 02:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	85		107		109		70-130	%	08.26.18 02:22
4-Bromofluorobenzene	112		106		115		70-130	%	08.26.18 02:22

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061313

Parent Sample Id: 596319-008

Matrix: Soil

MS Sample Id: 596319-008 S

Prep Method: SW5030B

Date Prep: 08.25.18

MSD Sample Id: 596319-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0734	73	0.0633	63	70-130	15	35	mg/kg	08.26.18 03:04	X
Toluene	<0.00202	0.101	0.0649	64	0.0571	57	70-130	13	35	mg/kg	08.26.18 03:04	X
Ethylbenzene	<0.00202	0.101	0.0672	67	0.0608	61	70-130	10	35	mg/kg	08.26.18 03:04	X
m,p-Xylenes	<0.00403	0.202	0.148	73	0.131	66	70-130	12	35	mg/kg	08.26.18 03:04	X
o-Xylene	<0.00202	0.101	0.0689	68	0.0592	59	70-130	15	35	mg/kg	08.26.18 03:04	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		98		70-130	%	08.26.18 03:04
4-Bromofluorobenzene	101		124		70-130	%	08.26.18 03:04

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 C STUDY

Page 1 of 1

Page 1 of 1

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

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

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

Client / Reporting Information						Project Information							Analytical Information								Matrix Codes												
Company Name / Branch: LT Environmental, Inc. Peruvia Office Company Address: 300 N.W. St. Building Unit #103 Midland TX 79765 Email: abaker@ltenv.com 432-794-5178 Phone No: Project Contact: Heirion Baker Sample's Name: Yada Lambert						Project Name/Number: PLU Delaware C S W P Project Location: NM - Eddy ZRP- 1305, 1383, 1304 Invoice To: XTO Energy Kyle Littlell PO Number:																											
No.	Field ID / Point of Collection	Collection	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX 801 (only BTEX) TPH (MRO, GRO, DRO) 801S Chloride (300.0)																		
1	BH01	14'	8/17/18	10:15	S	1								X																			
2	BH02	5.5'		11:30	S	1								X																			
3	BH03	4'		11:45	S	1								X																			
4	BH04	9.5'		12:15	S	1								X																			
5	BH05	6'		13:50	S	1								X																			
6	BH06	9'		15:00	S	1								X																			
7	BH07	12'		16:10	S	1								X																			
8																																	
9																																	
10																																	
Turnaround Time (Business days)						(Data Deliverable Information)										Notes:																	
Same Day TAT						<input type="checkbox"/> Level II Std QC						<input type="checkbox"/> Level IV (Full Data Pkg /raw data)																					
Next Day EMERGENCY						<input type="checkbox"/> 7 Day TAT						<input type="checkbox"/> Level III Std QC+ Forms						<input type="checkbox"/> TRRP Level IV															
2 Day EMERGENCY						<input checked="" type="checkbox"/> Contract TAT						<input type="checkbox"/> Level 3 (CLP Forms)						<input type="checkbox"/> UST / RG -411															
3 Day EMERGENCY						<input type="checkbox"/> TRRP Checklist																											
TAT Starts Day received by Lab, if received by 5:00 pm																FED-EX / UPS: Tracking # 7301897946																	
Relinquished by Sample:						SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING CHAIN OF DELIVERY																											
Relinquished By:						Received By: R. Collier																											
Date Time:						Date Time: 8/20/18 9:45																											
Relinquished by:						Received By: Anna Novak																											
Date Time:						Date Time: 8/20/18 15:30																											
Relinquished by:						Received By:																											
Date Time:						Date Time:																											
Preserved where applicable						On Ice										Cooler Temp. O.S.																	
Thermo Corr. Factor																																	

ORIGIN ID:MAFA (806) 794-1296 XENCO XENCO 1211 W. FLORIDA AVE MIDLAND, TX 79701 UNITED STATES US		SHIP DATE: 20AUG18 ACTWGT: 34.00 LB CAD: 10183706/NET4040 DIMS: 19x16x12 IN
TO XENCO XENCO 1211 W. FLORIDA AVE MIDLAND TX 79701 (806) 794-1296 INV: REF: PO: DEPT:		BILL RECIPIENT

TRK# 7730 1897 6966

0201

**41 MAFA**

TX-US LBB

79701

TUE - 21 AUG 3:00P

STANDARD OVERNIGHT





552J1/3309/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 Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.





## XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 08/21/2018 10:35:00 AM

Work Order #: 596449

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)?	.5
#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: 08/21/2018

Checklist reviewed by:

Jessica Kramer

Date: 08/22/2018

# Analytical Report 596788

for  
**LT Environmental, Inc.**

**Project Manager: Adrian Baker**

**PLU Delaware C SWD**

**10-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)





10-SEP-18

Project Manager: **Adrian Baker**

**LT Environmental, Inc.**

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **596788**

**PLU Delaware C SWD**

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) 596788. 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. 596788 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 596788****LT Environmental, Inc., Arvada, CO**

PLU Delaware C SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH14	S	08-21-18 09:20	3 ft	596788-001
BH15	S	08-21-18 09:45	2 ft	596788-002
BH16	S	08-21-18 11:30	2 ft	596788-003
SS12	S	08-21-18 11:10	6 In	596788-004
SS13	S	08-21-18 11:15	6 In	596788-005
SS14	S	08-21-18 11:20	6 In	596788-006
SS15	S	08-21-18 11:25	6 In	596788-007
SS16	S	08-21-18 11:30	6 In	596788-008



## CASE NARRATIVE

*Client Name: LT Environmental, Inc.*

*Project Name: PLU Delaware C SWD*

Project ID:  
Work Order Number(s): 596788

Report Date: 10-SEP-18  
Date Received: 08/23/2018

---

**Sample receipt non conformances and comments:**

PER CLIENT EMAIL, CORRECTED SAMPLE NAMES FOR SAMPLE 004,005,006,007,008 JKR  
09/10/18 NEW VERSION GENERATED

---

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

None

**Analytical non conformances and comments:**

Batch: LBA-3061313 BTEX by EPA 8021B

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

Batch: LBA-3061437 BTEX by EPA 8021B

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

Batch: LBA-3061634 BTEX by EPA 8021B

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



# Certificate of Analysis Summary 596788

LT Environmental, Inc., Arvada, CO

Project Name: PLU Delaware C SWD

Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Thu Aug-23-18 11:00 am

Report Date: 10-SEP-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	596788-001	596788-002	596788-003	596788-004	596788-005	596788-006
	<i>Field Id:</i>	BH14	BH15	BH16	SS12	SS13	SS14
	<i>Depth:</i>	3- ft	2- ft	2- ft	6- In	6- In	6- In
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-21-18 09:20	Aug-21-18 09:45	Aug-21-18 11:30	Aug-21-18 11:10	Aug-21-18 11:15	Aug-21-18 11:20
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Aug-28-18 08:00	Aug-28-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00
	<i>Analyzed:</i>	Aug-28-18 17:43	Aug-28-18 18:04	Aug-29-18 11:18	Aug-29-18 11:38	Aug-29-18 11:58	Aug-29-18 12:19
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00402 0.00402	<0.00398 0.00398	<0.00399 0.00399	<0.00401 0.00401
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Aug-23-18 16:45	Aug-23-18 16:45	Aug-23-18 16:45	Aug-23-18 16:45	Aug-23-18 16:45	Aug-23-18 16:45
	<i>Analyzed:</i>	Aug-23-18 21:20	Aug-23-18 21:42	Aug-23-18 21:58	Aug-23-18 22:04	Aug-23-18 22:09	Aug-23-18 22:15
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		317 4.98	1080 4.97	453 4.96	1800 24.9	258 4.95	183 4.96
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Aug-24-18 07:00	Aug-24-18 07:00	Aug-24-18 07:00	Aug-24-18 07:00	Aug-24-18 07:00	Aug-24-18 07:00
	<i>Analyzed:</i>	Aug-24-18 09:31	Aug-24-18 09:51	Aug-24-18 10:52	Aug-24-18 11:11	Aug-24-18 11:31	Aug-24-18 11:51
	<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	<15.0 15.0	<14.9 14.9	<15.0 15.0	<14.9 14.9	<15.0 15.0
Diesel Range Organics (DRO)		60.7 15.0	<15.0 15.0	20.6 14.9	81.5 15.0	15.5 14.9	<15.0 15.0
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<14.9 14.9	<15.0 15.0
Total TPH		60.7 15.0	<15.0 15.0	20.6 14.9	81.5 15.0	15.5 14.9	<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 596788

LT Environmental, Inc., Arvada, CO

Project Name: PLU Delaware C SWD

Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Thu Aug-23-18 11:00 am

Report Date: 10-SEP-18

Project Manager: Jessica Kramer

<b>Analysis Requested</b>	<b>Lab Id:</b>	596788-007	596788-008				
	<b>Field Id:</b>	SS15	SS16				
	<b>Depth:</b>	6- In	6- In				
	<b>Matrix:</b>	SOIL	SOIL				
	<b>Sampled:</b>	Aug-21-18 11:25	Aug-21-18 11:30				
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Aug-25-18 10:30	Aug-29-18 08:00				
	<b>Analyzed:</b>	Aug-26-18 15:17	Aug-29-18 13:00				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Benzene		<0.00201 0.00201	<0.00201 0.00201				
Toluene		<0.00201 0.00201	<0.00201 0.00201				
Ethylbenzene		<0.00201 0.00201	<0.00201 0.00201				
m,p-Xylenes		<0.00402 0.00402	<0.00402 0.00402				
o-Xylene		<0.00201 0.00201	<0.00201 0.00201				
Total Xylenes		<0.00201 0.00201	<0.00201 0.00201				
Total BTEX		<0.00201 0.00201	<0.00201 0.00201				
<b>Inorganic Anions by EPA 300</b>	<b>Extracted:</b>	Aug-23-18 16:45	Aug-23-18 16:45				
	<b>Analyzed:</b>	Aug-23-18 22:20	Aug-23-18 22:26				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Chloride		82.0 4.95	491 24.8				
<b>TPH by SW8015 Mod</b>	<b>Extracted:</b>	Aug-24-18 07:00	Aug-24-18 07:00				
	<b>Analyzed:</b>	Aug-24-18 12:11	Aug-24-18 12:32				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0				
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0				
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0				
Total TPH		<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 Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH14**  
Lab Sample Id: 596788-001

Matrix: Soil  
Date Collected: 08.21.18 09.20

Date Received: 08.23.18 11.00  
Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061062

Date Prep: 08.23.18 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	317	4.98	mg/kg	08.23.18 21.20		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

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	08.24.18 09.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	60.7	15.0	mg/kg	08.24.18 09.31		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 09.31	U	1
Total TPH	PHC635	60.7	15.0	mg/kg	08.24.18 09.31		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	08.24.18 09.31	
o-Terphenyl	84-15-1	92	%	70-135	08.24.18 09.31	



## Certificate of Analytical Results 596788

## LT Environmental, Inc., Arvada, CO

## PLU Delaware C SWD

Sample Id: **BH14**  
 Lab Sample Id: 596788-001

Matrix: Soil  
 Date Collected: 08.21.18 09.20

Date Received: 08.23.18 11.00  
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3061437

Date Prep: 08.28.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.28.18 17.43	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.28.18 17.43	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.28.18 17.43	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.28.18 17.43	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.28.18 17.43	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.28.18 17.43	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.28.18 17.43	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>	
4-Bromofluorobenzene	460-00-4	94	%	70-130	08.28.18 17.43		
1,4-Difluorobenzene	540-36-3	95	%	70-130	08.28.18 17.43		





# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH15**  
Lab Sample Id: 596788-002

Matrix: Soil  
Date Collected: 08.21.18 09.45

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061062

Date Prep: 08.23.18 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1080	4.97	mg/kg	08.23.18 21.42		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

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	08.24.18 09.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 09.51	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 09.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 09.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	08.24.18 09.51	
o-Terphenyl	84-15-1	85	%	70-135	08.24.18 09.51	



## Certificate of Analytical Results 596788

## LT Environmental, Inc., Arvada, CO

## PLU Delaware C SWD

Sample Id: **BH15**  
 Lab Sample Id: 596788-002

Matrix: Soil  
 Date Collected: 08.21.18 09.45

Date Received: 08.23.18 11.00  
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.28.18 08.00

Basis: Wet Weight

Seq Number: 3061437

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.28.18 18.04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.28.18 18.04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.28.18 18.04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.28.18 18.04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.28.18 18.04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.28.18 18.04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.28.18 18.04	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>	
4-Bromofluorobenzene	460-00-4	87	%	70-130	08.28.18 18.04		
1,4-Difluorobenzene	540-36-3	94	%	70-130	08.28.18 18.04		



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH16**  
Lab Sample Id: 596788-003

Matrix: Soil  
Date Collected: 08.21.18 11.30

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061062

Date Prep: 08.23.18 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	453	4.96	mg/kg	08.23.18 21.58		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

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	08.24.18 10.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	20.6	14.9	mg/kg	08.24.18 10.52		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.24.18 10.52	U	1
Total TPH	PHC635	20.6	14.9	mg/kg	08.24.18 10.52		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	08.24.18 10.52	
o-Terphenyl	84-15-1	95	%	70-135	08.24.18 10.52	



## Certificate of Analytical Results 596788

## LT Environmental, Inc., Arvada, CO

## PLU Delaware C SWD

Sample Id: **BH16**  
 Lab Sample Id: 596788-003

Matrix: Soil  
 Date Collected: 08.21.18 11.30

Date Received: 08.23.18 11.00  
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.29.18 11.18	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.29.18 11.18	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.29.18 11.18	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.29.18 11.18	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.29.18 11.18	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.29.18 11.18	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.29.18 11.18	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	103	%	70-130	08.29.18 11.18		
1,4-Difluorobenzene	540-36-3	119	%	70-130	08.29.18 11.18		



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **SS12**  
Lab Sample Id: 596788-004

Matrix: Soil  
Date Collected: 08.21.18 11.10

Date Received: 08.23.18 11.00  
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061062

Date Prep: 08.23.18 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1800	24.9	mg/kg	08.23.18 22.04		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

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	08.24.18 11.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	81.5	15.0	mg/kg	08.24.18 11.11		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 11.11	U	1
Total TPH	PHC635	81.5	15.0	mg/kg	08.24.18 11.11		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	08.24.18 11.11	
o-Terphenyl	84-15-1	99	%	70-135	08.24.18 11.11	



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **SS12**  
Lab Sample Id: 596788-004

Matrix: Soil  
Date Collected: 08.21.18 11.10

Date Received: 08.23.18 11.00  
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.29.18 11.38	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.29.18 11.38	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.29.18 11.38	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.29.18 11.38	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.29.18 11.38	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.29.18 11.38	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.29.18 11.38	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	95	%	70-130	08.29.18 11.38		
4-Bromofluorobenzene	460-00-4	103	%	70-130	08.29.18 11.38		



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **SS13**  
Lab Sample Id: 596788-005

Matrix: Soil  
Date Collected: 08.21.18 11.15

Date Received: 08.23.18 11.00  
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300  
Tech: SCM  
Analyst: SCM  
Seq Number: 3061062

Prep Method: E300P  
% Moisture:  
Date Prep: 08.23.18 16.45  
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	258	4.95	mg/kg	08.23.18 22.09		1

Analytical Method: TPH by SW8015 Mod  
Tech: ARM  
Analyst: ARM  
Seq Number: 3061228

Prep Method: TX1005P  
% Moisture:  
Date Prep: 08.24.18 07.00  
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.24.18 11.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	15.5	14.9	mg/kg	08.24.18 11.31		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.24.18 11.31	U	1
Total TPH	PHC635	15.5	14.9	mg/kg	08.24.18 11.31		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	92	%	70-135	08.24.18 11.31		
o-Terphenyl	84-15-1	97	%	70-135	08.24.18 11.31		





## Certificate of Analytical Results 596788

## LT Environmental, Inc., Arvada, CO

## PLU Delaware C SWD

Sample Id: **SS13**  
 Lab Sample Id: 596788-005

Matrix: Soil  
 Date Collected: 08.21.18 11.15

Date Received: 08.23.18 11.00  
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.29.18 11.58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.29.18 11.58	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.29.18 11.58	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.29.18 11.58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.29.18 11.58	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.29.18 11.58	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.29.18 11.58	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	86	%	70-130	08.29.18 11.58		
1,4-Difluorobenzene	540-36-3	95	%	70-130	08.29.18 11.58		



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **SS14**  
Lab Sample Id: 596788-006

Matrix: Soil  
Date Collected: 08.21.18 11.20

Date Received: 08.23.18 11.00  
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061062

Date Prep: 08.23.18 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	183	4.96	mg/kg	08.23.18 22.15		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

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	08.24.18 11.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 11.51	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 11.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 11.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	08.24.18 11.51	
o-Terphenyl	84-15-1	100	%	70-135	08.24.18 11.51	



## Certificate of Analytical Results 596788

## LT Environmental, Inc., Arvada, CO

## PLU Delaware C SWD

Sample Id: **SS14**  
 Lab Sample Id: 596788-006

Matrix: Soil  
 Date Collected: 08.21.18 11.20

Date Received: 08.23.18 11.00  
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.29.18 12.19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.29.18 12.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.29.18 12.19	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.29.18 12.19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.29.18 12.19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.29.18 12.19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.29.18 12.19	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	08.29.18 12.19		
1,4-Difluorobenzene	540-36-3	96	%	70-130	08.29.18 12.19		



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **SS15**  
Lab Sample Id: 596788-007

Matrix: Soil  
Date Collected: 08.21.18 11.25

Date Received: 08.23.18 11.00  
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300  
Tech: SCM  
Analyst: SCM  
Seq Number: 3061062

Prep Method: E300P  
% Moisture:  
Date Prep: 08.23.18 16.45  
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	82.0	4.95	mg/kg	08.23.18 22.20		1

Analytical Method: TPH by SW8015 Mod  
Tech: ARM  
Analyst: ARM  
Seq Number: 3061228

Prep Method: TX1005P  
% Moisture:  
Date Prep: 08.24.18 07.00  
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.24.18 12.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 12.11	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 12.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 12.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.24.18 12.11	
o-Terphenyl	84-15-1	95	%	70-135	08.24.18 12.11	



## Certificate of Analytical Results 596788

## LT Environmental, Inc., Arvada, CO

## PLU Delaware C SWD

Sample Id: **SS15**  
 Lab Sample Id: 596788-007

Matrix: Soil  
 Date Collected: 08.21.18 11.25

Date Received: 08.23.18 11.00  
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.26.18 15.17	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.26.18 15.17	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.26.18 15.17	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.26.18 15.17	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.26.18 15.17	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.26.18 15.17	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.26.18 15.17	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>	
4-Bromofluorobenzene	460-00-4	100	%	70-130	08.26.18 15.17		
1,4-Difluorobenzene	540-36-3	97	%	70-130	08.26.18 15.17		



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **SS16**  
Lab Sample Id: 596788-008

Matrix: Soil  
Date Collected: 08.21.18 11.30

Date Received: 08.23.18 11.00  
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061062

Date Prep: 08.23.18 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	491	24.8	mg/kg	08.23.18 22.26		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

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	08.24.18 12.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 12.32	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 12.32	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 12.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.24.18 12.32	
o-Terphenyl	84-15-1	95	%	70-135	08.24.18 12.32	



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **SS16**  
Lab Sample Id: 596788-008

Matrix: Soil  
Date Collected: 08.21.18 11.30

Date Received: 08.23.18 11.00  
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.29.18 13.00	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.29.18 13.00	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.29.18 13.00	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.29.18 13.00	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.29.18 13.00	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.29.18 13.00	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.29.18 13.00	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	115	%	70-130	08.29.18 13.00		
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.29.18 13.00		





## Flagging Criteria



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

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



**LT Environmental, Inc.**  
PLU Delaware C SWD

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061062

Matrix: Solid

Prep Method: E300P

MB Sample Id: 7661018-1-BLK

LCS Sample Id: 7661018-1-BKS

Date Prep: 08.23.18

LCSD Sample Id: 7661018-1-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	246	98	246	98	90-110	0	20	mg/kg	08.23.18 19:52	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061062

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 596788-001

MS Sample Id: 596788-001 S

Date Prep: 08.23.18

MSD Sample Id: 596788-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	317	249	553	95	551	94	90-110	0	20	mg/kg	08.23.18 21:25	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061062

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 596792-001

MS Sample Id: 596792-001 S

Date Prep: 08.23.18

MSD Sample Id: 596792-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.12	256	263	103	266	104	90-110	1	20	mg/kg	08.23.18 20:09	

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3061228

Matrix: Solid

Prep Method: TX1005P

MB Sample Id: 7661126-1-BLK

LCS Sample Id: 7661126-1-BKS

Date Prep: 08.24.18

LCSD Sample Id: 7661126-1-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	923	92	909	91	70-135	2	20	mg/kg	08.24.18 08:51	
Diesel Range Organics (DRO)	<15.0	1000	958	96	944	94	70-135	1	20	mg/kg	08.24.18 08:51	

**Surrogate**

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		114		109		70-135	%	08.24.18 08:51
o-Terphenyl	105		100		102		70-135	%	08.24.18 08:51

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 Delaware C SWD

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3061228

Parent Sample Id: 596788-002

Matrix: Soil

MS Sample Id: 596788-002 S

Prep Method: TX1005P

Date Prep: 08.24.18

MSD Sample Id: 596788-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	1000	100	902	90	70-135	10	20	mg/kg	08.25.18 12:31	
Diesel Range Organics (DRO)	<15.0	997	1050	105	944	94	70-135	11	20	mg/kg	08.25.18 12:31	

**Surrogate**

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		113		70-135	%	08.25.18 12:31
o-Terphenyl	112		99		70-135	%	08.25.18 12:31

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3061313

MB Sample Id: 7661181-1-BLK

Matrix: Solid

LCS Sample Id: 7661181-1-BKS

Prep Method: SW5030B

Date Prep: 08.25.18

LCSD Sample Id: 7661181-1-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	0.0935	94	0.101	100	70-130	8	35	mg/kg	08.26.18 02:22	
Toluene	<0.00200	0.100	0.0863	86	0.0948	94	70-130	9	35	mg/kg	08.26.18 02:22	
Ethylbenzene	<0.00200	0.100	0.0976	98	0.104	103	70-130	6	35	mg/kg	08.26.18 02:22	
m,p-Xylenes	<0.00401	0.200	0.217	109	0.233	116	70-130	7	35	mg/kg	08.26.18 02:22	
o-Xylene	<0.00200	0.100	0.106	106	0.114	113	70-130	7	35	mg/kg	08.26.18 02:22	

**Surrogate**

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	85		107		109		70-130	%	08.26.18 02:22
4-Bromofluorobenzene	112		106		115		70-130	%	08.26.18 02:22

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3061437

MB Sample Id: 7661266-1-BLK

Matrix: Solid

LCS Sample Id: 7661266-1-BKS

Prep Method: SW5030B

Date Prep: 08.28.18

LCSD Sample Id: 7661266-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.103	102	0.0983	98	70-130	5	35	mg/kg	08.28.18 08:45	
Toluene	<0.00202	0.101	0.0972	96	0.0929	93	70-130	5	35	mg/kg	08.28.18 08:45	
Ethylbenzene	<0.00202	0.101	0.111	110	0.105	105	70-130	6	35	mg/kg	08.28.18 08:45	
m,p-Xylenes	<0.00403	0.202	0.214	106	0.203	101	70-130	5	35	mg/kg	08.28.18 08:45	
o-Xylene	<0.00202	0.101	0.0985	98	0.0938	94	70-130	5	35	mg/kg	08.28.18 08:45	

**Surrogate**

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		93		94		70-130	%	08.28.18 08:45
4-Bromofluorobenzene	94		93		92		70-130	%	08.28.18 08:45

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 Delaware C SWD

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3061634

MB Sample Id: 7661378-1-BLK

Matrix: Solid

LCS Sample Id: 7661378-1-BKS

Prep Method: SW5030B

Date Prep: 08.29.18

LCSD Sample Id: 7661378-1-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	0.0998	0.107	107	0.0937	94	70-130	13	35	mg/kg	08.29.18 08:15	
Toluene	<0.00200	0.0998	0.103	103	0.0902	90	70-130	13	35	mg/kg	08.29.18 08:15	
Ethylbenzene	<0.00200	0.0998	0.117	117	0.103	103	70-130	13	35	mg/kg	08.29.18 08:15	
m,p-Xylenes	<0.00399	0.200	0.224	112	0.197	98	70-130	13	35	mg/kg	08.29.18 08:15	
o-Xylene	<0.00200	0.0998	0.103	103	0.0906	91	70-130	13	35	mg/kg	08.29.18 08:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		97		95		70-130	%	08.29.18 08:15
4-Bromofluorobenzene	95		96		92		70-130	%	08.29.18 08:15

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3061313

Parent Sample Id: 596319-008

Matrix: Soil

MS Sample Id: 596319-008 S

Prep Method: SW5030B

Date Prep: 08.25.18

MSD Sample Id: 596319-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0734	73	0.0633	63	70-130	15	35	mg/kg	08.26.18 03:04	X
Toluene	<0.00202	0.101	0.0649	64	0.0571	57	70-130	13	35	mg/kg	08.26.18 03:04	X
Ethylbenzene	<0.00202	0.101	0.0672	67	0.0608	61	70-130	10	35	mg/kg	08.26.18 03:04	X
m,p-Xylenes	<0.00403	0.202	0.148	73	0.131	66	70-130	12	35	mg/kg	08.26.18 03:04	X
o-Xylene	<0.00202	0.101	0.0689	68	0.0592	59	70-130	15	35	mg/kg	08.26.18 03:04	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		98		70-130	%	08.26.18 03:04
4-Bromofluorobenzene	101		124		70-130	%	08.26.18 03:04

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3061437

Parent Sample Id: 596789-001

Matrix: Soil

MS Sample Id: 596789-001 S

Prep Method: SW5030B

Date Prep: 08.28.18

MSD Sample Id: 596789-001 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	0.0998	0.0530	53	0.0585	59	70-130	10	35	mg/kg	08.28.18 09:26	X
Toluene	<0.00200	0.0998	0.0511	51	0.0558	56	70-130	9	35	mg/kg	08.28.18 09:26	X
Ethylbenzene	<0.00200	0.0998	0.0580	58	0.0633	63	70-130	9	35	mg/kg	08.28.18 09:26	X
m,p-Xylenes	<0.00399	0.200	0.112	56	0.122	61	70-130	9	35	mg/kg	08.28.18 09:26	X
o-Xylene	<0.00200	0.0998	0.0516	52	0.0571	57	70-130	10	35	mg/kg	08.28.18 09:26	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		90		70-130	%	08.28.18 09:26
4-Bromofluorobenzene	90		90		70-130	%	08.28.18 09:26

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

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

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

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



**LT Environmental, Inc.**  
PLU Delaware C SWD

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061634

Parent Sample Id: 596847-001

Matrix: Soil

MS Sample Id: 596847-001 S

Prep Method: SW5030B

Date Prep: 08.29.18

MSD Sample Id: 596847-001 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	0.0278	28	0.0346	34	70-130	22	35	mg/kg	08.29.18 08:56	X
Toluene	0.0129	0.100	0.0164	4	0.0608	47	70-130	115	35	mg/kg	08.29.18 08:56	XF
Ethylbenzene	0.00535	0.100	0.0118	6	0.0186	13	70-130	45	35	mg/kg	08.29.18 08:56	XF
m,p-Xylenes	0.0247	0.201	0.0299	3	0.0495	12	70-130	49	35	mg/kg	08.29.18 08:56	XF
o-Xylene	0.00639	0.100	0.0127	6	0.0133	7	70-130	5	35	mg/kg	08.29.18 08:56	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		90		70-130	%	08.29.18 08:56
4-Bromofluorobenzene	128		122		70-130	%	08.29.18 08:56

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



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

Xenco Quote #

Xenco Job #

5946788

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: LT Environmental, Inc. - Permian Office				Project Name/Number: PLU Delaware C SWD											
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705				Project Location: Carlsbad, NM											
Email: Abaker@ltenv.com Project Contact: Adrian Baker Samplers Name: Joseph S. Hernandez				Phone No: (432) 704-5178				Invoice To: XTO Energy - Kyle Littrell							
				PO Number:											
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	Field Comments
1	BH14	3'	8/21/18	0920	S	1									BTEX EPA 8020
2	BH15	2'	8/21/18	0945	S	1									TPH EPA 8015
3	BH16	2'	8/21/18	1130	S	1									Chloride 300.1
4	SS5A	6"	8/21/18	1110	S	1									
5	SS6A	6"	8/21/18	1115	S	1									
6	SS7A	6"	8/21/18	1120	S	1									
7	SS8A	6"	8/21/18	1125	S	1									
8	SS9A	6"	8/21/18	1130	S	1									
9															
10															
Turnaround Time (Business days)															
Data Deliverable Information															
Notes:															
<input type="checkbox"/> Same Day TAT <input checked="" 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"/> 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:				Received By:				Relinquished By:				Date Time:			
1				2				3				4			
Relinquished by:				Received By:				Relinquished By:				Date Time:			
3				Received By:				Relinquished By:				Date Time:			
5				Received By:				Relinquished By:				Date Time:			
FED-EX / UPS, Tracking #				Cooler Temp.				Thermo. Corr. Factor							
17364374152				7.0 RB				0.0							

Notice: 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.



ORIGIN ID:MAFA (806) 794-1296 XENCO XENCO 1211 W. FLORIDA AVE MIDLAND, TX 79701 UNITED STATES US		SHIP DATE: 22AUG18 ACTWGT: 30.00 LB CAD: 101813706IN/ET4040 DIMS: 19x15x13 IN BILL RECIPIENT
TO XENCO XENCO 1211 W. FLORIDA AVE MIDLAND TX 79701 (806) 794-1296 REF:		
PO: DEPT:		
		
		
552J113309/DCA5		

TRK# 0201 7730 4137 4152	THU - 23 AUG 3:00P STANDARD OVERNIGHT
41 MAFA TX-US 79701 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: 08/23/2018 11:00:00 AM

Work Order #: 596788

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)?	2.6
#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: 08/23/2018

Checklist reviewed by:

Jessica Kramer

Date: 08/23/2018

# Analytical Report 596789

for  
**LT Environmental, Inc.**

**Project Manager: Adrian Baker**

**PLU Delaware C SWD**

**10-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)



10-SEP-18

Project Manager: **Adrian Baker**

**LT Environmental, Inc.**

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **596789**

**PLU Delaware C SWD**

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) 596789. 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. 596789 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 596789

LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH08	S	08-20-18 12:00	2 ft	596789-001
BH09	S	08-20-18 13:25	2 ft	596789-002
BH10	S	08-20-18 13:40	2 ft	596789-003
SS08	S	08-20-18 15:25	0.5 ft	596789-004



## CASE NARRATIVE

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

**Project Name:** PLU Delaware C SWD

Project ID:

Work Order Number(s): 596789

Report Date: 10-SEP-18

Date Received: 08/23/2018

---

**Sample receipt non conformances and comments:**

PER CLIENTS EMAIL, CORRECTED SAMPLE 004 NAME FROM SS1A TO SS08 JKR 09/10/18  
NEW VERSION GENERATED

---

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

None

**Analytical non conformances and comments:**

Batch: LBA-3061437 BTEX by EPA 8021B

Lab Sample ID 596789-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, 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: 596789-001.

The Laboratory Control Sample for Toluene, Benzene, 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.

Batch: LBA-3061634 BTEX by EPA 8021B

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



# Certificate of Analysis Summary 596789

LT Environmental, Inc., Arvada, CO

Project Name: PLU Delaware C SWD

Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Thu Aug-23-18 11:00 am

Report Date: 10-SEP-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	596789-001	596789-002	596789-003	596789-004		
	<i>Field Id:</i>	BH08	BH09	BH10	SS08		
	<i>Depth:</i>	2- ft	2- ft	2- ft	0.5- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Aug-20-18 12:00	Aug-20-18 13:25	Aug-20-18 13:40	Aug-20-18 15:25		
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Aug-28-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00		
	<i>Analyzed:</i>	Aug-28-18 10:47	Aug-29-18 13:20	Aug-29-18 14:21	Aug-29-18 14:41		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
Toluene		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
Ethylbenzene		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
m,p-Xylenes		<0.00403 0.00403	<0.00404 0.00404	<0.00398 0.00398	<0.00399 0.00399		
o-Xylene		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
Total Xylenes		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
Total BTEX		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Aug-28-18 13:15	Aug-28-18 13:15	Aug-28-18 13:15	Aug-28-18 13:15		
	<i>Analyzed:</i>	Aug-28-18 14:41	Aug-28-18 14:47	Aug-28-18 15:08	Aug-28-18 14:14		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		24.1 1.00	<1.00 1.00	3.07 1.00	<1.00 1.00		
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Aug-24-18 07:00	Aug-24-18 07:00	Aug-24-18 07:00	Aug-24-18 07:00		
	<i>Analyzed:</i>	Aug-24-18 12:52	Aug-24-18 13:12	Aug-24-18 14:13	Aug-24-18 14:33		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	61.9 15.0		
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0		
Total TPH		<15.0 15.0	<14.9 14.9	<15.0 15.0	61.9 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 Analytical Results 596789



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH08**  
Lab Sample Id: 596789-001

Matrix: Soil  
Date Collected: 08.20.18 12.00

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061510

Date Prep: 08.28.18 13.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.1	1.00	mg/kg	08.28.18 14.41		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

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	08.24.18 12.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 12.52	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 12.52	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 12.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	08.24.18 12.52	
o-Terphenyl	84-15-1	94	%	70-135	08.24.18 12.52	





# Certificate of Analytical Results 596789

## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH08**  
 Lab Sample Id: 596789-001

Matrix: Soil  
 Date Collected: 08.20.18 12.00

Date Received: 08.23.18 11.00  
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.28.18 08.00

Basis: Wet Weight

Seq Number: 3061437

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	08.28.18 10.47	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	08.28.18 10.47	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.28.18 10.47	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	08.28.18 10.47	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	08.28.18 10.47	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.28.18 10.47	U	1
Total BTEX		<0.00202	0.00202	mg/kg	08.28.18 10.47	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	94	%	70-130	08.28.18 10.47		
4-Bromofluorobenzene	460-00-4	92	%	70-130	08.28.18 10.47		



# Certificate of Analytical Results 596789



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH09**  
Lab Sample Id: 596789-002

Matrix: Soil  
Date Collected: 08.20.18 13.25

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061510

Date Prep: 08.28.18 13.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<1.00	1.00	mg/kg	08.28.18 14.47	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

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	08.24.18 13.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	08.24.18 13.12	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.24.18 13.12	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	08.24.18 13.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	08.24.18 13.12	
o-Terphenyl	84-15-1	86	%	70-135	08.24.18 13.12	



## Certificate of Analytical Results 596789

## LT Environmental, Inc., Arvada, CO

## PLU Delaware C SWD

Sample Id: **BH09**  
 Lab Sample Id: 596789-002

Matrix: Soil  
 Date Collected: 08.20.18 13.25

Date Received: 08.23.18 11.00  
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	08.29.18 13.20	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	08.29.18 13.20	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.29.18 13.20	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	08.29.18 13.20	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	08.29.18 13.20	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.29.18 13.20	U	1
Total BTEX		<0.00202	0.00202	mg/kg	08.29.18 13.20	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	128	%	70-130	08.29.18 13.20		
1,4-Difluorobenzene	540-36-3	98	%	70-130	08.29.18 13.20		



# Certificate of Analytical Results 596789



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH10**  
Lab Sample Id: 596789-003

Matrix: Soil  
Date Collected: 08.20.18 13.40

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061510

Date Prep: 08.28.18 13.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3.07	1.00	mg/kg	08.28.18 15.08		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

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	08.24.18 14.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 14.13	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 14.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 14.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	08.24.18 14.13	
o-Terphenyl	84-15-1	89	%	70-135	08.24.18 14.13	



## Certificate of Analytical Results 596789

## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH10**  
 Lab Sample Id: 596789-003

Matrix: Soil  
 Date Collected: 08.20.18 13.40

Date Received: 08.23.18 11.00  
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.29.18 14.21	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.29.18 14.21	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.29.18 14.21	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.29.18 14.21	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.29.18 14.21	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.29.18 14.21	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.29.18 14.21	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>	
4-Bromofluorobenzene	460-00-4	92	%	70-130	08.29.18 14.21		
1,4-Difluorobenzene	540-36-3	93	%	70-130	08.29.18 14.21		



# Certificate of Analytical Results 596789



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **SS08**  
Lab Sample Id: 596789-004

Matrix: Soil  
Date Collected: 08.20.18 15.25

Date Received: 08.23.18 11.00  
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061510

Date Prep: 08.28.18 13.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<1.00	1.00	mg/kg	08.28.18 14.14	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

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	08.24.18 14.33	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>61.9</b>	15.0	mg/kg	08.24.18 14.33		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 14.33	U	1
<b>Total TPH</b>	PHC635	<b>61.9</b>	15.0	mg/kg	08.24.18 14.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	08.24.18 14.33	
o-Terphenyl	84-15-1	94	%	70-135	08.24.18 14.33	



# Certificate of Analytical Results 596789



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **SS08**  
Lab Sample Id: 596789-004

Matrix: Soil  
Date Collected: 08.20.18 15.25

Date Received: 08.23.18 11.00  
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.29.18 14.41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.29.18 14.41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.29.18 14.41	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.29.18 14.41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.29.18 14.41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.29.18 14.41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.29.18 14.41	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	90	%	70-130	08.29.18 14.41		
1,4-Difluorobenzene	540-36-3	95	%	70-130	08.29.18 14.41		





## Flagging Criteria



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

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



**LT Environmental, Inc.**  
PLU Delaware C SWD

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061510

MB Sample Id: 7661279-1-BLK

Matrix: Solid

LCS Sample Id: 7661279-1-BKS

Prep Method: E300P

Date Prep: 08.28.18

LCSD Sample Id: 7661279-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<1.00	50.0	50.4	101	51.0	102	90-110	1	20	mg/kg	08.28.18 14:03	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061510

Parent Sample Id: 596789-004

Matrix: Soil

MS Sample Id: 596789-004 S

Prep Method: E300P

Date Prep: 08.28.18

MSD Sample Id: 596789-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<1.00	50.0	49.4	99	49.5	99	90-110	0	20	mg/kg	08.28.18 14:19	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061510

Parent Sample Id: 596910-005

Matrix: Soil

MS Sample Id: 596910-005 S

Prep Method: E300P

Date Prep: 08.28.18

MSD Sample Id: 596910-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.6	50.0	64.1	97	64.1	97	90-110	0	20	mg/kg	08.28.18 15:41	

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3061228

MB Sample Id: 7661126-1-BLK

Matrix: Solid

LCS Sample Id: 7661126-1-BKS

Prep Method: TX1005P

Date Prep: 08.24.18

LCSD Sample Id: 7661126-1-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	923	92	909	91	70-135	2	20	mg/kg	08.24.18 08:51	
Diesel Range Organics (DRO)	<15.0	1000	958	96	944	94	70-135	1	20	mg/kg	08.24.18 08:51	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		114		109		70-135	%	08.24.18 08:51
o-Terphenyl	105		100		102		70-135	%	08.24.18 08:51

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 Delaware C SWD

**Analytical Method:** TPH by SW8015 Mod

Seq Number: 3061228

Parent Sample Id: 596788-002

Matrix: Soil

MS Sample Id: 596788-002 S

Prep Method: TX1005P

Date Prep: 08.24.18

MSD Sample Id: 596788-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	1000	100	902	90	70-135	10	20	mg/kg	08.25.18 12:31	
Diesel Range Organics (DRO)	<15.0	997	1050	105	944	94	70-135	11	20	mg/kg	08.25.18 12:31	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		113		70-135	%	08.25.18 12:31
o-Terphenyl	112		99		70-135	%	08.25.18 12:31

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061437

MB Sample Id: 7661266-1-BLK

Matrix: Solid

LCS Sample Id: 7661266-1-BKS

Prep Method: SW5030B

Date Prep: 08.28.18

LCSD Sample Id: 7661266-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.103	102	0.0983	98	70-130	5	35	mg/kg	08.28.18 08:45	
Toluene	<0.00202	0.101	0.0972	96	0.0929	93	70-130	5	35	mg/kg	08.28.18 08:45	
Ethylbenzene	<0.00202	0.101	0.111	110	0.105	105	70-130	6	35	mg/kg	08.28.18 08:45	
m,p-Xylenes	<0.00403	0.202	0.214	106	0.203	101	70-130	5	35	mg/kg	08.28.18 08:45	
o-Xylene	<0.00202	0.101	0.0985	98	0.0938	94	70-130	5	35	mg/kg	08.28.18 08:45	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		93		94		70-130	%	08.28.18 08:45
4-Bromofluorobenzene	94		93		92		70-130	%	08.28.18 08:45

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061634

MB Sample Id: 7661378-1-BLK

Matrix: Solid

LCS Sample Id: 7661378-1-BKS

Prep Method: SW5030B

Date Prep: 08.29.18

LCSD Sample Id: 7661378-1-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	0.0998	0.107	107	0.0937	94	70-130	13	35	mg/kg	08.29.18 08:15	
Toluene	<0.00200	0.0998	0.103	103	0.0902	90	70-130	13	35	mg/kg	08.29.18 08:15	
Ethylbenzene	<0.00200	0.0998	0.117	117	0.103	103	70-130	13	35	mg/kg	08.29.18 08:15	
m,p-Xylenes	<0.00399	0.200	0.224	112	0.197	98	70-130	13	35	mg/kg	08.29.18 08:15	
o-Xylene	<0.00200	0.0998	0.103	103	0.0906	91	70-130	13	35	mg/kg	08.29.18 08:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		97		95		70-130	%	08.29.18 08:15
4-Bromofluorobenzene	95		96		92		70-130	%	08.29.18 08:15

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 Delaware C SWD

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3061437

Parent Sample Id: 596789-001

Matrix: Soil

MS Sample Id: 596789-001 S

Prep Method: SW5030B

Date Prep: 08.28.18

MSD Sample Id: 596789-001 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	0.0998	0.0530	53	0.0585	59	70-130	10	35	mg/kg	08.28.18 09:26	X
Toluene	<0.00200	0.0998	0.0511	51	0.0558	56	70-130	9	35	mg/kg	08.28.18 09:26	X
Ethylbenzene	<0.00200	0.0998	0.0580	58	0.0633	63	70-130	9	35	mg/kg	08.28.18 09:26	X
m,p-Xylenes	<0.00399	0.200	0.112	56	0.122	61	70-130	9	35	mg/kg	08.28.18 09:26	X
o-Xylene	<0.00200	0.0998	0.0516	52	0.0571	57	70-130	10	35	mg/kg	08.28.18 09:26	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		90		70-130	%	08.28.18 09:26
4-Bromofluorobenzene	90		90		70-130	%	08.28.18 09:26

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3061634

Parent Sample Id: 596847-001

Matrix: Soil

MS Sample Id: 596847-001 S

Prep Method: SW5030B

Date Prep: 08.29.18

MSD Sample Id: 596847-001 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	0.0278	28	0.0346	34	70-130	22	35	mg/kg	08.29.18 08:56	X
Toluene	0.0129	0.100	0.0164	4	0.0608	47	70-130	115	35	mg/kg	08.29.18 08:56	XF
Ethylbenzene	0.00535	0.100	0.0118	6	0.0186	13	70-130	45	35	mg/kg	08.29.18 08:56	XF
m,p-Xylenes	0.0247	0.201	0.0299	3	0.0495	12	70-130	49	35	mg/kg	08.29.18 08:56	XF
o-Xylene	0.00639	0.100	0.0127	6	0.0133	7	70-130	5	35	mg/kg	08.29.18 08:56	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		90		70-130	%	08.29.18 08:56
4-Bromofluorobenzene	128		122		70-130	%	08.29.18 08:56

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



*Setting the Standard since 1930*  
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.xerico.com](http://www.xerico.com)

[illegible]

ORIGIN ID:MAFA (806) 794-1296 XENCO 1211 W. FLORIDA AVE MIDLAND, TX 79701 UNITED STATES US		SHIP DATE: 22AUG18 ACTWGT: 30.00 LB CAD: 101813106/NET/4040 DIMS: 19X15X13 IN BILL RECIPIENT
TO XENCO XENCO 1211 W. FLORIDA AVE MIDLAND TX 79701 (806) 794-1296 INV: REF: PO: DEPT:		
552J11/3309/DC/5		

TRK# 7730 4137 4152 0201 41 MAFA TX-US LBB 79701	THU - 23 AUG 3:00P STANDARD OVERNIGHT
--	--


J182118081001ur

**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: 08/23/2018 11:00:00 AM

Work Order #: 596789

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)?	2.6
#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: 08/23/2018

Checklist reviewed by:

Jessica Kramer

Date: 08/23/2018



# Analytical Report 596790

for  
**LT Environmental, Inc.**

**Project Manager: Adrian Baker**

**PLU Delaware C SWD**

**10-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)



10-SEP-18

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

Reference: XENCO Report No(s): **596790**  
**PLU Delaware C SWD**  
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) 596790. 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. 596790 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 596790****LT Environmental, Inc., Arvada, CO**

PLU Delaware C SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS09	S	08-20-18 15:30	0.5 ft	596790-001
SS10	S	08-20-18 15:35	0.5 ft	596790-002
BH11	S	08-20-18 14:30	2 ft	596790-003
BH12	S	08-20-18 15:20	2 ft	596790-004
SS11	S	08-20-18 15:40	0.5 ft	596790-005
BH 13	S	08-20-18 16:30	12 ft	596790-006



## CASE NARRATIVE

*Client Name: LT Environmental, Inc.*

*Project Name: PLU Delaware C SWD*

Project ID:  
Work Order Number(s): 596790

Report Date: 10-SEP-18  
Date Received: 08/23/2018

---

**Sample receipt non conformance and comments:**

PER CLIENTS EMAIL, CORRECTED SAMPLE NAMES FOR SAMPLE 001,002,005 JKR 09/10/18  
NEW VERSION GENERATED

---

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

None

**Analytical non conformance and comments:**

Batch: LBA-3061634 BTEX by EPA 8021B

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



# Certificate of Analysis Summary 596790

LT Environmental, Inc., Arvada, CO

Project Name: PLU Delaware C SWD

Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Thu Aug-23-18 11:00 am

Report Date: 10-SEP-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	596790-001	596790-002	596790-003	596790-004	596790-005	596790-006
	<i>Field Id:</i>	SS09	SS10	BH11	BH12	SS11	BH 13
	<i>Depth:</i>	0.5- ft	0.5- ft	2- ft	2- ft	0.5- ft	12- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-20-18 15:30	Aug-20-18 15:35	Aug-20-18 14:30	Aug-20-18 15:20	Aug-20-18 15:40	Aug-20-18 16:30
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Aug-29-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00
	<i>Analyzed:</i>	Aug-29-18 15:02	Aug-29-18 15:23	Aug-29-18 16:05	Aug-29-18 15:44	Aug-29-18 16:27	Aug-29-18 16:48
	<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	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201
m,p-Xylenes		<0.00401 0.00401	<0.00403 0.00403	<0.00398 0.00398	<0.00398 0.00398	<0.00402 0.00402	<0.00402 0.00402
o-Xylene		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201
Total Xylenes		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201
Total BTEX		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Aug-24-18 13:00	Aug-24-18 13:00	Aug-24-18 13:00	Aug-24-18 13:00	Aug-24-18 13:00	Aug-24-18 13:00
	<i>Analyzed:</i>	Aug-24-18 14:38	Aug-24-18 14:55	Aug-24-18 15:00	Aug-24-18 15:06	Aug-24-18 15:38	Aug-24-18 15:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		6.32 4.99	<4.99 4.99	147 4.99	500 5.00	64.4 4.96	90.0 4.95
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Aug-23-18 15:00	Aug-23-18 15:00	Aug-23-18 15:00	Aug-23-18 15:00	Aug-23-18 15:00	Aug-23-18 15:00
	<i>Analyzed:</i>	Aug-24-18 01:31	Aug-24-18 01:51	Aug-24-18 02:11	Aug-24-18 02:31	Aug-24-18 02:50	Aug-24-18 03:10
	<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	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<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 Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **SS09**  
Lab Sample Id: 596790-001

Matrix: Soil  
Date Collected: 08.20.18 15.30

Date Received: 08.23.18 11.00  
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061240

Date Prep: 08.24.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.32	4.99	mg/kg	08.24.18 14.38		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061132

Date Prep: 08.23.18 15.00

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	08.24.18 01.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 01.31	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 01.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 01.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	08.24.18 01.31	
o-Terphenyl	84-15-1	103	%	70-135	08.24.18 01.31	



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **SS09**  
Lab Sample Id: 596790-001

Matrix: Soil  
Date Collected: 08.20.18 15.30

Date Received: 08.23.18 11.00  
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.29.18 15.02	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.29.18 15.02	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.29.18 15.02	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.29.18 15.02	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.29.18 15.02	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.29.18 15.02	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.29.18 15.02	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	91	%	70-130	08.29.18 15.02		
4-Bromofluorobenzene	460-00-4	92	%	70-130	08.29.18 15.02		





# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **SS10**  
Lab Sample Id: 596790-002

Matrix: Soil  
Date Collected: 08.20.18 15.35

Date Received: 08.23.18 11.00  
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061240

Date Prep: 08.24.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	08.24.18 14.55	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061132

Date Prep: 08.23.18 15.00

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	08.24.18 01.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 01.51	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 01.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 01.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	08.24.18 01.51	
o-Terphenyl	84-15-1	90	%	70-135	08.24.18 01.51	



## Certificate of Analytical Results 596790

## LT Environmental, Inc., Arvada, CO

## PLU Delaware C SWD

Sample Id: **SS10**  
 Lab Sample Id: 596790-002

Matrix: Soil  
 Date Collected: 08.20.18 15.35

Date Received: 08.23.18 11.00  
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3061634

Date Prep: 08.29.18 08.00

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	08.29.18 15.23	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	08.29.18 15.23	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.29.18 15.23	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	08.29.18 15.23	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	08.29.18 15.23	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.29.18 15.23	U	1
Total BTEX		<0.00202	0.00202	mg/kg	08.29.18 15.23	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	92	%	70-130	08.29.18 15.23		
1,4-Difluorobenzene	540-36-3	97	%	70-130	08.29.18 15.23		



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH11**  
Lab Sample Id: 596790-003

Matrix: Soil  
Date Collected: 08.20.18 14.30

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061240

Date Prep: 08.24.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	147	4.99	mg/kg	08.24.18 15.00		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061132

Date Prep: 08.23.18 15.00

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	08.24.18 02.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 02.11	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 02.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 02.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	08.24.18 02.11	
o-Terphenyl	84-15-1	92	%	70-135	08.24.18 02.11	



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH11**  
Lab Sample Id: 596790-003

Matrix: Soil  
Date Collected: 08.20.18 14.30

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.29.18 16.05	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.29.18 16.05	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.29.18 16.05	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.29.18 16.05	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.29.18 16.05	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.29.18 16.05	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.29.18 16.05	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	97	%	70-130	08.29.18 16.05		
4-Bromofluorobenzene	460-00-4	91	%	70-130	08.29.18 16.05		



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH12**  
Lab Sample Id: 596790-004

Matrix: Soil  
Date Collected: 08.20.18 15.20

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061240

Date Prep: 08.24.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	500	5.00	mg/kg	08.24.18 15.06		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061132

Date Prep: 08.23.18 15.00

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	08.24.18 02.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 02.31	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 02.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 02.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.24.18 02.31	
o-Terphenyl	84-15-1	91	%	70-135	08.24.18 02.31	



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH12**  
Lab Sample Id: 596790-004

Matrix: Soil  
Date Collected: 08.20.18 15.20

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.29.18 15.44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.29.18 15.44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.29.18 15.44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.29.18 15.44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.29.18 15.44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.29.18 15.44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.29.18 15.44	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	%	70-130	08.29.18 15.44		
4-Bromofluorobenzene	460-00-4	94	%	70-130	08.29.18 15.44		



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **SS11**  
Lab Sample Id: 596790-005

Matrix: Soil  
Date Collected: 08.20.18 15.40

Date Received: 08.23.18 11.00  
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061240

Date Prep: 08.24.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>64.4</b>	4.96	mg/kg	08.24.18 15.38		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061132

Date Prep: 08.23.18 15.00

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	08.24.18 02.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 02.50	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 02.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 02.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.24.18 02.50	
o-Terphenyl	84-15-1	93	%	70-135	08.24.18 02.50	





# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **SS11**  
 Lab Sample Id: 596790-005

Matrix: Soil  
 Date Collected: 08.20.18 15.40

Date Received: 08.23.18 11.00  
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.29.18 16.27	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.29.18 16.27	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.29.18 16.27	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.29.18 16.27	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.29.18 16.27	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.29.18 16.27	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.29.18 16.27	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	100	%	70-130	08.29.18 16.27		
4-Bromofluorobenzene	460-00-4	95	%	70-130	08.29.18 16.27		



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH 13**  
Lab Sample Id: 596790-006

Matrix: Soil  
Date Collected: 08.20.18 16.30

Date Received: 08.23.18 11.00  
Sample Depth: 12 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061240

Date Prep: 08.24.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	90.0	4.95	mg/kg	08.24.18 15.54		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061132

Date Prep: 08.23.18 15.00

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	08.24.18 03.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 03.10	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 03.10	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 03.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.24.18 03.10	
o-Terphenyl	84-15-1	94	%	70-135	08.24.18 03.10	



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH 13**  
Lab Sample Id: 596790-006

Matrix: Soil  
Date Collected: 08.20.18 16.30

Date Received: 08.23.18 11.00  
Sample Depth: 12 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.29.18 16.48	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.29.18 16.48	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.29.18 16.48	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.29.18 16.48	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.29.18 16.48	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.29.18 16.48	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.29.18 16.48	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>	
1,4-Difluorobenzene	540-36-3	96	%	70-130	08.29.18 16.48		
4-Bromofluorobenzene	460-00-4	92	%	70-130	08.29.18 16.48		



## Flagging Criteria



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

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



**LT Environmental, Inc.**  
PLU Delaware C SWD

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061240

MB Sample Id: 7661143-1-BLK

Matrix: Solid

LCS Sample Id: 7661143-1-BKS

Prep Method: E300P

Date Prep: 08.24.18

LCSD Sample Id: 7661143-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.99	250	242	97	245	98	90-110	1	20	mg/kg	08.24.18 14:27	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061240

Parent Sample Id: 596790-001

Matrix: Soil

MS Sample Id: 596790-001 S

Prep Method: E300P

Date Prep: 08.24.18

MSD Sample Id: 596790-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.32	250	250	97	250	97	90-110	0	20	mg/kg	08.24.18 14:44	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061240

Parent Sample Id: 596977-003

Matrix: Soil

MS Sample Id: 596977-003 S

Prep Method: E300P

Date Prep: 08.24.18

MSD Sample Id: 596977-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	623	251	835	84	833	84	90-110	0	20	mg/kg	08.24.18 16:27	X

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3061132

MB Sample Id: 7661027-1-BLK

Matrix: Solid

LCS Sample Id: 7661027-1-BKS

Prep Method: TX1005P

Date Prep: 08.23.18

LCSD Sample Id: 7661027-1-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	967	97	945	95	70-135	2	20	mg/kg	08.23.18 18:59	
Diesel Range Organics (DRO)	<15.0	1000	1000	100	970	97	70-135	3	20	mg/kg	08.23.18 18:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	96		119		116		70-135	%	08.23.18 18:59
o-Terphenyl	99		99		94		70-135	%	08.23.18 18:59

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

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

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

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



**LT Environmental, Inc.**  
PLU Delaware C SWD

**Analytical Method:** TPH by SW8015 Mod

Seq Number: 3061132

Parent Sample Id: 596598-001

Matrix: Soil

MS Sample Id: 596598-001 S

Prep Method: TX1005P

Date Prep: 08.23.18

MSD Sample Id: 596598-001 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)	27.6	1000	920	89	938	91	70-135	2	20	mg/kg	08.23.18 19:57	
Diesel Range Organics (DRO)	233	1000	1120	89	1140	91	70-135	2	20	mg/kg	08.23.18 19:57	

**Surrogate**

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		123		70-135	%	08.23.18 19:57
o-Terphenyl	106		106		70-135	%	08.23.18 19:57

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061634

MB Sample Id: 7661378-1-BLK

Matrix: Solid

LCS Sample Id: 7661378-1-BKS

Prep Method: SW5030B

Date Prep: 08.29.18

LCSD Sample Id: 7661378-1-BSL

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.107	107	0.0937	94	70-130	13	35	mg/kg	08.29.18 08:15	
Toluene	<0.00200	0.0998	0.103	103	0.0902	90	70-130	13	35	mg/kg	08.29.18 08:15	
Ethylbenzene	<0.00200	0.0998	0.117	117	0.103	103	70-130	13	35	mg/kg	08.29.18 08:15	
m,p-Xylenes	<0.00399	0.200	0.224	112	0.197	98	70-130	13	35	mg/kg	08.29.18 08:15	
o-Xylene	<0.00200	0.0998	0.103	103	0.0906	91	70-130	13	35	mg/kg	08.29.18 08:15	

**Surrogate**

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		97		95		70-130	%	08.29.18 08:15
4-Bromofluorobenzene	95		96		92		70-130	%	08.29.18 08:15

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061634

Parent Sample Id: 596847-001

Matrix: Soil

MS Sample Id: 596847-001 S

Prep Method: SW5030B

Date Prep: 08.29.18

MSD Sample Id: 596847-001 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	0.0278	28	0.0346	34	70-130	22	35	mg/kg	08.29.18 08:56	X
Toluene	0.0129	0.100	0.0164	4	0.0608	47	70-130	115	35	mg/kg	08.29.18 08:56	XF
Ethylbenzene	0.00535	0.100	0.0118	6	0.0186	13	70-130	45	35	mg/kg	08.29.18 08:56	XF
m,p-Xylenes	0.0247	0.201	0.0299	3	0.0495	12	70-130	49	35	mg/kg	08.29.18 08:56	XF
o-Xylene	0.00639	0.100	0.0127	6	0.0133	7	70-130	5	35	mg/kg	08.29.18 08:56	X

**Surrogate**

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		90		70-130	%	08.29.18 08:56
4-Bromofluorobenzene	128		122		70-130	%	08.29.18 08:56

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



*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)

Client / Reporting Information				Project Information															
Company Name / Branch: LT Environmental, Inc. - Permian Office Company Address:  3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705 Email: Abaker@ltenvy.com Adrian Baker Samplers Name Joseph S. Hernandez				Project Name/Number: PU Delamare C SWD Project Location: Carlsbad, NM Invoice To: XTO Energy - Kyle Littlell PO Number:															
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX EPA 8030	TPH EPA 8015	Chloride 300.1	Analytical Information	Matrix Codes
1	SS 2 A	0.5'	8/10/18	1530	S	1								X	X	X	X		
2	SS 3 A	0.5'		1535	S	1								X	X	X	X		
3	BH 1 I	2'		1730	S	1								X	X	X	X		
4	BH 1 R	2'		1520	S	1								X	X	X	X		
5	SS 4 A	0.5'		1540	S	1								X	X	X	X		
6	P H 13	12'		1630	S	1								X	X	X	X		
7																			
8																			
9																			
10																			
				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																			
Relinquished By Sampler:				Date Time:				Received By:				Date Time:				FED-EX / UPS Tracking #			
Relinquished by:				8/12 9:36				1				8/22 15:30				1304137452			
Relinquished by:				Date Time:				Received By:				Date Time:							
Relinquished by:				Date Time:				Received By:				Date Time:							
On Ice				Cooler Temp				Thermo Corr Factor											
Signature of client and relinquishment of samples constitutes a valid purchase order from client company to Xenko, its affiliates and subcontractors. If assessor standard terms and conditions of service apply, they will be made available upon request.																			



ORIGIN ID:MAFA (806) 794-1296 XENCO 1211 W. FLORIDA AVE MIDLAND, TX 79701 UNITED STATES US		SHIP DATE: 22AUG18 ACT WGT: 30.00 LB CAD: 10/8/13/06/NET 4040 DIMS: 19x15x13 IN BILL RECIPIENT
TO XENCO XENCO 1211 W. FLORIDA AVE MIDLAND TX 79701 (806) 794-1296 REF:		
INV: DEPT:		
		
		
J182118081501ur		
552J113309/DCA5		

TRK# 7730 4137 4152 0201 41 MAFA TX-US LBB 79701	THU - 23 AUG 3:00P STANDARD OVERNIGHT
--	--

**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: 08/23/2018 11:00:00 AM

Work Order #: 596790

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)?	2.6
#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: 08/23/2018

Checklist reviewed by:

Jessica Kramer

Date: 08/23/2018

# Analytical Report 641128

for  
LT Environmental, Inc.

**Project Manager: Dan Moir**

**PLU Delaware C**

**012919038**

**30-OCT-19**

Collected By: Client



**1089 N Canal Street  
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

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

Xenco-Dallas (EPA Lab Code: TX01468):

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

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

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

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

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

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

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



30-OCT-19

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

Reference: XENCO Report No(s): **641128**  
**PLU Delaware C**  
Project Address:

**Dan Moir:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 641128. 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. 641128 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 641128****LT Environmental, Inc., Arvada, CO**

PLU Delaware C

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
PH17	S	10-24-19 11:00	1 ft	641128-001
PH17A	S	10-24-19 11:10	2 ft	641128-002
PH18	S	10-24-19 11:25	1 ft	641128-003
PH18A	S	10-24-19 11:30	2 ft	641128-004
PH19	S	10-24-19 11:35	1 ft	641128-005
PH19A	S	10-24-19 11:40	2 ft	641128-006
PH20	S	10-24-19 11:50	1 ft	641128-007
PH20A	S	10-24-19 11:55	2 ft	641128-008
PH21	S	10-24-19 12:10	1 ft	641128-009
PH21A	S	10-24-19 12:15	2 ft	641128-010
PH22	S	10-24-19 12:25	1 ft	641128-011
PH22A	S	10-24-19 12:35	2 ft	641128-012
PH23	S	10-24-19 12:45	1 ft	641128-013
PH23A	S	10-24-19 12:50	2 ft	641128-014
PH24	S	10-24-19 13:10	1 ft	641128-015
PH24A	S	10-24-19 13:20	2 ft	641128-016



## CASE NARRATIVE

*Client Name: LT Environmental, Inc.*

*Project Name: PLU Delaware C*

Project ID: 012919038

Work Order Number(s): 641128

Report Date: 30-OCT-19

Date Received: 10/25/2019

---

**Sample receipt non conformances and comments:**

None

---

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

None

**Analytical non conformances and comments:**

Batch: LBA-3105876 BTEX by EPA 8021B

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



# Certificate of Analysis Summary 641128

LT Environmental, Inc., Arvada, CO

Project Name: PLU Delaware C

Project Id: 012919038

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Oct-25-19 10:32 am

Report Date: 30-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641128-001	641128-002	641128-003	641128-004	641128-005	641128-006
	<i>Field Id:</i>	PH17	PH17A	PH18	PH18A	PH19	PH19A
	<i>Depth:</i>	1- ft	2- ft	1- ft	2- ft	1- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-24-19 11:00	Oct-24-19 11:10	Oct-24-19 11:25	Oct-24-19 11:30	Oct-24-19 11:35	Oct-24-19 11:40
<b>BTEX by EPA 8021B SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00
	<i>Analyzed:</i>	Oct-30-19 00:43	Oct-30-19 01:03	Oct-30-19 01:23	Oct-30-19 01:44	Oct-30-19 02:04	Oct-30-19 02:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00200 0.00200	<0.00208 0.00208	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00201 0.00201	<0.00200 0.00200	<0.00208 0.00208	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	<0.00208 0.00208	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00402 0.00402	<0.00400 0.00400	<0.00417 0.00417	<0.00397 0.00397	<0.00399 0.00399	<0.00399 0.00399
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	<0.00208 0.00208	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00208 0.00208	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00201 0.00201	<0.00200 0.00200	<0.00208 0.00208	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
<b>Chloride by EPA 300 SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-28-19 11:25	Oct-28-19 11:25	Oct-28-19 11:25	Oct-28-19 11:25	Oct-28-19 11:25	Oct-28-19 13:20
	<i>Analyzed:</i>	Oct-28-19 14:35	Oct-28-19 14:41	Oct-28-19 14:46	Oct-28-19 14:52	Oct-28-19 14:58	Oct-28-19 15:56
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		912 4.97	577 4.97	519 5.04	13.8 4.98	614 5.00	16.3 4.96
<b>TPH by SW8015 Mod SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00
	<i>Analyzed:</i>	Oct-28-19 16:05	Oct-28-19 17:01	Oct-28-19 17:19	Oct-28-19 17:38	Oct-28-19 17:56	Oct-28-19 18:15
	<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)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8
Diesel Range Organics (DRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8
Total GRO-DRO		<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8
Total TPH		<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8

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

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

Jessica Kramer  
Project Assistant





# Certificate of Analysis Summary 641128

LT Environmental, Inc., Arvada, CO

Project Name: PLU Delaware C

Project Id: 012919038

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Oct-25-19 10:32 am

Report Date: 30-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641128-007	641128-008	641128-009	641128-010	641128-011	641128-012
	<i>Field Id:</i>	PH20	PH20A	PH21	PH21A	PH22	PH22A
	<i>Depth:</i>	1- ft	2- ft	1- ft	2- ft	1- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-24-19 11:50	Oct-24-19 11:55	Oct-24-19 12:10	Oct-24-19 12:15	Oct-24-19 12:25	Oct-24-19 12:35
<b>BTEX by EPA 8021B SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00
	<i>Analyzed:</i>	Oct-30-19 03:42	Oct-30-19 04:02	Oct-30-19 04:22	Oct-30-19 04:43	Oct-30-19 05:03	Oct-30-19 05:23
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Toluene		<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene		<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
m,p-Xylenes		<0.00398 0.00398	<0.00397 0.00397	<0.00403 0.00403	<0.00399 0.00399	<0.00401 0.00401	<0.00396 0.00396
o-Xylene		<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Total Xylenes		<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Total BTEX		<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
<b>Chloride by EPA 300 SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-28-19 13:20	Oct-28-19 13:20	Oct-28-19 13:20	Oct-28-19 13:20	Oct-28-19 13:20	Oct-28-19 13:20
	<i>Analyzed:</i>	Oct-28-19 16:01	Oct-28-19 16:17	Oct-28-19 16:22	Oct-28-19 16:37	Oct-28-19 16:42	Oct-28-19 16:48
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		579 4.98	1200 5.02	833 4.99	1480 24.9	1060 5.05	931 5.00
<b>TPH by SW8015 Mod SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00
	<i>Analyzed:</i>	Oct-28-19 18:34	Oct-28-19 18:52	Oct-28-19 19:11	Oct-28-19 19:30	Oct-28-19 20:08	Oct-28-19 20:26
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0	<49.8 49.8	<49.9 49.9	<50.0 50.0	<49.9 49.9
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0	<49.8 49.8	<49.9 49.9	<50.0 50.0	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<49.8 49.8	<49.9 49.9	<50.0 50.0	<49.9 49.9
Total GRO-DRO		<50.0 50.0	<50.0 50.0	<49.8 49.8	<49.9 49.9	<50.0 50.0	<49.9 49.9
Total TPH		<50.0 50.0	<50.0 50.0	<49.8 49.8	<49.9 49.9	<50.0 50.0	<49.9 49.9

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. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

Jessica Kramer  
Project Assistant



# Certificate of Analysis Summary 641128

LT Environmental, Inc., Arvada, CO

Project Name: PLU Delaware C

Project Id: 012919038

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Oct-25-19 10:32 am

Report Date: 30-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641128-013	641128-014	641128-015	641128-016		
	<i>Field Id:</i>	PH23	PH23A	PH24	PH24A		
	<i>Depth:</i>	1- ft	2- ft	1- ft	2- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Oct-24-19 12:45	Oct-24-19 12:50	Oct-24-19 13:10	Oct-24-19 13:20		
<b>BTEX by EPA 8021B SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00		
	<i>Analyzed:</i>	Oct-30-19 05:43	Oct-30-19 06:03	Oct-30-19 06:23	Oct-30-19 06:43		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
m,p-Xylenes		<0.00398 0.00398	<0.00400 0.00400	<0.00399 0.00399	<0.00399 0.00399		
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
<b>Chloride by EPA 300 SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-28-19 13:20	Oct-28-19 13:20	Oct-28-19 13:20	Oct-28-19 13:20		
	<i>Analyzed:</i>	Oct-28-19 16:53	Oct-28-19 16:58	Oct-28-19 17:03	Oct-28-19 17:08		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		1260 5.05	1260 5.05	384 4.96	319 5.02		
<b>TPH by SW8015 Mod SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00		
	<i>Analyzed:</i>	Oct-28-19 20:45	Oct-28-19 21:03	Oct-28-19 21:22	Oct-28-19 21:41		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0		
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0		
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0		
Total GRO-DRO		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0		
Total TPH		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0		

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

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

Jessica Kramer  
Project Assistant



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH17**  
Lab Sample Id: 641128-001

Matrix: Soil  
Date Collected: 10.24.19 11.00

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3105644

Date Prep: 10.28.19 11.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	912	4.97	mg/kg	10.28.19 14.35		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.28.19 16.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.28.19 16.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.28.19 16.05	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.28.19 16.05	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.28.19 16.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	10.28.19 16.05	
o-Terphenyl	84-15-1	98	%	70-135	10.28.19 16.05	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH17**  
Lab Sample Id: 641128-001

Matrix: Soil  
Date Collected: 10.24.19 11.00

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 10.29.19 14.00

Basis: Wet Weight

Seq Number: 3105876

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.30.19 00.43	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.30.19 00.43	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.30.19 00.43	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.30.19 00.43	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.30.19 00.43	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.30.19 00.43	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.30.19 00.43	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>	
4-Bromofluorobenzene	460-00-4	110	%	70-130	10.30.19 00.43		
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.30.19 00.43		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH17A**  
Lab Sample Id: 641128-002

Matrix: Soil  
Date Collected: 10.24.19 11.10

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3105644

Date Prep: 10.28.19 11.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	577	4.97	mg/kg	10.28.19 14.41		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.28.19 17.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.28.19 17.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.28.19 17.01	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.28.19 17.01	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.28.19 17.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	10.28.19 17.01	
o-Terphenyl	84-15-1	98	%	70-135	10.28.19 17.01	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH17A**  
Lab Sample Id: 641128-002

Matrix: Soil  
Date Collected: 10.24.19 11.10

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3105876

Prep Method: SW5030B

% Moisture:

Date Prep: 10.29.19 14.00

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.19 01.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.19 01.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.19 01.03	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	10.30.19 01.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.19 01.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.19 01.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.19 01.03	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	10.30.19 01.03		
4-Bromofluorobenzene	460-00-4	106	%	70-130	10.30.19 01.03		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH18**  
Lab Sample Id: 641128-003

Matrix: Soil  
Date Collected: 10.24.19 11.25

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3105644

Date Prep: 10.28.19 11.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	519	5.04	mg/kg	10.28.19 14.46		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.19 17.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.19 17.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.19 17.19	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.19 17.19	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.19 17.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	10.28.19 17.19	
o-Terphenyl	84-15-1	97	%	70-135	10.28.19 17.19	





# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH18**  
Lab Sample Id: 641128-003

Matrix: Soil  
Date Collected: 10.24.19 11.25

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 10.29.19 14.00

Basis: Wet Weight

Seq Number: 3105876

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00208	0.00208	mg/kg	10.30.19 01.23	U	1
Toluene	108-88-3	<0.00208	0.00208	mg/kg	10.30.19 01.23	U	1
Ethylbenzene	100-41-4	<0.00208	0.00208	mg/kg	10.30.19 01.23	U	1
m,p-Xylenes	179601-23-1	<0.00417	0.00417	mg/kg	10.30.19 01.23	U	1
o-Xylene	95-47-6	<0.00208	0.00208	mg/kg	10.30.19 01.23	U	1
Total Xylenes	1330-20-7	<0.00208	0.00208	mg/kg	10.30.19 01.23	U	1
Total BTEX		<0.00208	0.00208	mg/kg	10.30.19 01.23	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	99	%	70-130	10.30.19 01.23		
1,4-Difluorobenzene	540-36-3	97	%	70-130	10.30.19 01.23		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH18A**  
Lab Sample Id: 641128-004

Matrix: Soil  
Date Collected: 10.24.19 11.30

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3105644

Date Prep: 10.28.19 11.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.8	4.98	mg/kg	10.28.19 14.52		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.28.19 17.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.28.19 17.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.28.19 17.38	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.28.19 17.38	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.28.19 17.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	10.28.19 17.38	
o-Terphenyl	84-15-1	100	%	70-135	10.28.19 17.38	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH18A**  
Lab Sample Id: 641128-004

Matrix: Soil  
Date Collected: 10.24.19 11.30

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 10.29.19 14.00

Basis: Wet Weight

Seq Number: 3105876

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.30.19 01.44	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.30.19 01.44	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.30.19 01.44	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.30.19 01.44	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.30.19 01.44	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.30.19 01.44	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.30.19 01.44	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	94	%	70-130	10.30.19 01.44		
4-Bromofluorobenzene	460-00-4	106	%	70-130	10.30.19 01.44		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH19**  
Lab Sample Id: 641128-005

Matrix: Soil  
Date Collected: 10.24.19 11.35

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3105644

Date Prep: 10.28.19 11.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	614	5.00	mg/kg	10.28.19 14.58		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.19 17.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.19 17.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.19 17.56	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.19 17.56	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.19 17.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	10.28.19 17.56	
o-Terphenyl	84-15-1	96	%	70-135	10.28.19 17.56	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH19**  
Lab Sample Id: 641128-005

Matrix: Soil  
Date Collected: 10.24.19 11.35

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 10.29.19 14.00

Basis: Wet Weight

Seq Number: 3105876

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.19 02.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.19 02.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.19 02.04	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.30.19 02.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.19 02.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.19 02.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.19 02.04	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>	
4-Bromofluorobenzene	460-00-4	116	%	70-130	10.30.19 02.04		
1,4-Difluorobenzene	540-36-3	96	%	70-130	10.30.19 02.04		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH19A**  
Lab Sample Id: 641128-006

Matrix: Soil  
Date Collected: 10.24.19 11.40

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300  
Tech: SPC  
Analyst: SPC  
Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P  
% Moisture:  
Basis: Wet Weight  
SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.3	4.96	mg/kg	10.28.19 15.56		1

Analytical Method: TPH by SW8015 Mod  
Tech: DVM  
Analyst: ARM  
Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P  
% Moisture:  
Basis: Wet Weight  
SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.28.19 18.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.28.19 18.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.28.19 18.15	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.28.19 18.15	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.28.19 18.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	10.28.19 18.15	
o-Terphenyl	84-15-1	100	%	70-135	10.28.19 18.15	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH19A**  
Lab Sample Id: 641128-006

Matrix: Soil  
Date Collected: 10.24.19 11.40

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 10.29.19 14.00

Basis: Wet Weight

Seq Number: 3105876

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.19 02.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.19 02.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.19 02.24	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.30.19 02.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.19 02.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.19 02.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.19 02.24	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	111	%	70-130	10.30.19 02.24		
1,4-Difluorobenzene	540-36-3	95	%	70-130	10.30.19 02.24		





# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH20**  
Lab Sample Id: 641128-007

Matrix: Soil  
Date Collected: 10.24.19 11.50

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	579	4.98	mg/kg	10.28.19 16.01		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.19 18.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.19 18.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.19 18.34	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.19 18.34	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.19 18.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	10.28.19 18.34	
o-Terphenyl	84-15-1	95	%	70-135	10.28.19 18.34	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH20**  
Lab Sample Id: 641128-007

Matrix: Soil  
Date Collected: 10.24.19 11.50

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3105876

Prep Method: SW5030B

% Moisture:

Date Prep: 10.29.19 14.00

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.30.19 03.42	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.30.19 03.42	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.30.19 03.42	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.30.19 03.42	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.30.19 03.42	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.30.19 03.42	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.30.19 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	99	%	70-130	10.30.19 03.42		
1,4-Difluorobenzene	540-36-3	97	%	70-130	10.30.19 03.42		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH20A**  
Lab Sample Id: 641128-008

Matrix: Soil  
Date Collected: 10.24.19 11.55

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1200	5.02	mg/kg	10.28.19 16.17		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.19 18.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.19 18.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.19 18.52	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.19 18.52	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.19 18.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	10.28.19 18.52	
o-Terphenyl	84-15-1	98	%	70-135	10.28.19 18.52	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH20A**  
Lab Sample Id: 641128-008

Matrix: Soil  
Date Collected: 10.24.19 11.55

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3105876

Prep Method: SW5030B

% Moisture:

Date Prep: 10.29.19 14.00

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.30.19 04.02	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.30.19 04.02	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.30.19 04.02	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.30.19 04.02	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.30.19 04.02	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.30.19 04.02	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.30.19 04.02	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	96	%	70-130	10.30.19 04.02		
4-Bromofluorobenzene	460-00-4	98	%	70-130	10.30.19 04.02		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH21**  
Lab Sample Id: 641128-009

Matrix: Soil  
Date Collected: 10.24.19 12.10

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	833	4.99	mg/kg	10.28.19 16.22		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.28.19 19.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.28.19 19.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.28.19 19.11	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.28.19 19.11	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.28.19 19.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	10.28.19 19.11	
o-Terphenyl	84-15-1	97	%	70-135	10.28.19 19.11	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH21**  
Lab Sample Id: 641128-009

Matrix: Soil  
Date Collected: 10.24.19 12.10

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3105876

Prep Method: SW5030B

% Moisture:

Date Prep: 10.29.19 14.00

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.30.19 04.22	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.30.19 04.22	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.30.19 04.22	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.30.19 04.22	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.30.19 04.22	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.30.19 04.22	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.30.19 04.22	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	97	%	70-130	10.30.19 04.22		
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.30.19 04.22		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH21A**  
Lab Sample Id: 641128-010

Matrix: Soil  
Date Collected: 10.24.19 12.15

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>1480</b>	24.9	mg/kg	10.28.19 16.37		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.28.19 19.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.28.19 19.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.28.19 19.30	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.28.19 19.30	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.28.19 19.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	10.28.19 19.30	
o-Terphenyl	84-15-1	96	%	70-135	10.28.19 19.30	





# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH21A**  
Lab Sample Id: 641128-010

Matrix: Soil  
Date Collected: 10.24.19 12.15

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3105876

Prep Method: SW5030B

% Moisture:

Date Prep: 10.29.19 14.00

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.19 04.43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.19 04.43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.19 04.43	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.30.19 04.43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.19 04.43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.19 04.43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.19 04.43	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>	
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.30.19 04.43		
1,4-Difluorobenzene	540-36-3	98	%	70-130	10.30.19 04.43		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH22**  
Lab Sample Id: 641128-011

Matrix: Soil  
Date Collected: 10.24.19 12.25

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>1060</b>	5.05	mg/kg	10.28.19 16.42		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.19 20.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.19 20.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.19 20.08	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.19 20.08	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.19 20.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.28.19 20.08	
o-Terphenyl	84-15-1	96	%	70-135	10.28.19 20.08	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH22**  
Lab Sample Id: 641128-011

Matrix: Soil  
Date Collected: 10.24.19 12.25

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3105876

Prep Method: SW5030B

% Moisture:

Date Prep: 10.29.19 14.00

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.19 05.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.19 05.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.19 05.03	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.30.19 05.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.19 05.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.19 05.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.19 05.03	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	%	70-130	10.30.19 05.03		
4-Bromofluorobenzene	460-00-4	109	%	70-130	10.30.19 05.03		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH22A**  
Lab Sample Id: 641128-012

Matrix: Soil  
Date Collected: 10.24.19 12.35

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	931	5.00	mg/kg	10.28.19 16.48		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.28.19 20.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.28.19 20.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.28.19 20.26	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.28.19 20.26	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.28.19 20.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.28.19 20.26	
o-Terphenyl	84-15-1	98	%	70-135	10.28.19 20.26	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH22A**  
Lab Sample Id: 641128-012

Matrix: Soil  
Date Collected: 10.24.19 12.35

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3105876

Prep Method: SW5030B

% Moisture:

Date Prep: 10.29.19 14.00

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.30.19 05.23	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.30.19 05.23	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.30.19 05.23	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	10.30.19 05.23	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.30.19 05.23	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.30.19 05.23	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.30.19 05.23	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	10.30.19 05.23		
4-Bromofluorobenzene	460-00-4	104	%	70-130	10.30.19 05.23		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH23**  
Lab Sample Id: 641128-013

Matrix: Soil  
Date Collected: 10.24.19 12.45

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1260	5.05	mg/kg	10.28.19 16.53		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.19 20.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.19 20.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.19 20.45	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.19 20.45	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.19 20.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.28.19 20.45	
o-Terphenyl	84-15-1	95	%	70-135	10.28.19 20.45	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH23**  
Lab Sample Id: 641128-013

Matrix: Soil  
Date Collected: 10.24.19 12.45

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3105876

Prep Method: SW5030B

% Moisture:

Date Prep: 10.29.19 14.00

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.30.19 05.43	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.30.19 05.43	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.30.19 05.43	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.30.19 05.43	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.30.19 05.43	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.30.19 05.43	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.30.19 05.43	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	98	%	70-130	10.30.19 05.43		
4-Bromofluorobenzene	460-00-4	100	%	70-130	10.30.19 05.43		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH23A**  
Lab Sample Id: 641128-014

Matrix: Soil  
Date Collected: 10.24.19 12.50

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300  
Tech: SPC  
Analyst: SPC  
Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P  
% Moisture:  
Basis: Wet Weight  
SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1260	5.05	mg/kg	10.28.19 16.58		1

Analytical Method: TPH by SW8015 Mod  
Tech: DVM  
Analyst: ARM  
Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P  
% Moisture:  
Basis: Wet Weight  
SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.19 21.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.19 21.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.19 21.03	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.19 21.03	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.19 21.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	10.28.19 21.03	
o-Terphenyl	84-15-1	98	%	70-135	10.28.19 21.03	





# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH23A**  
Lab Sample Id: 641128-014

Matrix: Soil  
Date Collected: 10.24.19 12.50

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 10.29.19 14.00

Basis: Wet Weight

Seq Number: 3105876

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.19 06.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.19 06.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.19 06.03	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	10.30.19 06.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.19 06.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.19 06.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.19 06.03	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	10.30.19 06.03		
1,4-Difluorobenzene	540-36-3	95	%	70-130	10.30.19 06.03		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH24**  
Lab Sample Id: 641128-015

Matrix: Soil  
Date Collected: 10.24.19 13.10

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300  
Tech: SPC  
Analyst: SPC  
Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P  
% Moisture:  
Basis: Wet Weight  
SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	384	4.96	mg/kg	10.28.19 17.03		1

Analytical Method: TPH by SW8015 Mod  
Tech: DVM  
Analyst: ARM  
Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P  
% Moisture:  
Basis: Wet Weight  
SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.28.19 21.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.28.19 21.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.28.19 21.22	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.28.19 21.22	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.28.19 21.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.28.19 21.22	
o-Terphenyl	84-15-1	99	%	70-135	10.28.19 21.22	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH24**  
Lab Sample Id: 641128-015

Matrix: Soil  
Date Collected: 10.24.19 13.10

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 10.29.19 14.00

Basis: Wet Weight

Seq Number: 3105876

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.19 06.23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.19 06.23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.19 06.23	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.30.19 06.23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.19 06.23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.19 06.23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.19 06.23	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	10.30.19 06.23		
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.30.19 06.23		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH24A**  
Lab Sample Id: 641128-016

Matrix: Soil  
Date Collected: 10.24.19 13.20

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	319	5.02	mg/kg	10.28.19 17.08		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.19 21.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.19 21.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.19 21.41	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.19 21.41	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.19 21.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	10.28.19 21.41	
o-Terphenyl	84-15-1	100	%	70-135	10.28.19 21.41	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH24A**  
Lab Sample Id: 641128-016

Matrix: Soil  
Date Collected: 10.24.19 13.20

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 10.29.19 14.00

Basis: Wet Weight

Seq Number: 3105876

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.19 06.43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.19 06.43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.19 06.43	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.30.19 06.43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.19 06.43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.19 06.43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.19 06.43	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>	
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.30.19 06.43		
1,4-Difluorobenzene	540-36-3	97	%	70-130	10.30.19 06.43		



## 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      **MQL** Method Quantitation Limit      **LOQ** Limit of Quantitation

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



**LT Environmental, Inc.**  
PLU Delaware C

**Analytical Method: Chloride by EPA 300**

Seq Number: 3105644

MB Sample Id: 7688995-1-BLK

Matrix: Solid

LCS Sample Id: 7688995-1-BKS

Prep Method: E300P

Date Prep: 10.28.19

LCSD Sample Id: 7688995-1-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	243	97	245	98	90-110	1	20	mg/kg	10.28.19 12:09	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3105644

MB Sample Id: 7689018-1-BLK

Matrix: Solid

LCS Sample Id: 7689018-1-BKS

Prep Method: E300P

Date Prep: 10.28.19

LCSD Sample Id: 7689018-1-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	263	105	262	105	90-110	0	20	mg/kg	10.28.19 14:39	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3105644

Parent Sample Id: 640979-091

Matrix: Soil

MS Sample Id: 640979-091 S

Prep Method: E300P

Date Prep: 10.28.19

MSD Sample Id: 640979-091 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.0	249	255	96	261	99	90-110	2	20	mg/kg	10.28.19 12:27	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3105644

Parent Sample Id: 641117-008

Matrix: Soil

MS Sample Id: 641117-008 S

Prep Method: E300P

Date Prep: 10.28.19

MSD Sample Id: 641117-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1140	199	1320	90	1330	95	90-110	1	20	mg/kg	10.28.19 13:48	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3105644

Parent Sample Id: 641128-007

Matrix: Soil

MS Sample Id: 641128-007 S

Prep Method: E300P

Date Prep: 10.28.19

MSD Sample Id: 641128-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	579	249	803	90	806	91	90-110	0	20	mg/kg	10.28.19 16:07	

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 Delaware C

**Analytical Method: Chloride by EPA 300**

Seq Number: 3105654

Parent Sample Id: 641200-021

Matrix: Soil

MS Sample Id: 641200-021 S

Prep Method: E300P

Date Prep: 10.28.19

MSD Sample Id: 641200-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	218	250	479	104	471	101	90-110	2	20	mg/kg	10.28.19 14:55	

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3105660

MB Sample Id: 7689072-1-BLK

Matrix: Solid

LCS Sample Id: 7689072-1-BKS

Prep Method: SW8015P

Date Prep: 10.28.19

LCSD Sample Id: 7689072-1-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	1130	113	1110	111	70-135	2	20	mg/kg	10.28.19 15:27	
Diesel Range Organics (DRO)	<15.0	1000	1080	108	1060	106	70-135	2	20	mg/kg	10.28.19 15:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		129		124		70-135	%	10.28.19 15:27
o-Terphenyl	105		115		111		70-135	%	10.28.19 15:27

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3105660

Matrix: Solid

MB Sample Id: 7689072-1-BLK

Prep Method: SW8015P

Date Prep: 10.28.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.28.19 15:08	

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3105660

Matrix: Soil

Parent Sample Id: 641128-001

MS Sample Id: 641128-001 S

Prep Method: SW8015P

Date Prep: 10.28.19

MSD Sample Id: 641128-001 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	1030	103	1050	105	70-135	2	20	mg/kg	10.28.19 16:23	
Diesel Range Organics (DRO)	<15.0	999	986	99	1000	100	70-135	1	20	mg/kg	10.28.19 16:23	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		123		70-135	%	10.28.19 16:23
o-Terphenyl	105		104		70-135	%	10.28.19 16:23

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 Delaware C

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3105876

MB Sample Id: 7689147-1-BLK

Matrix: Solid

LCS Sample Id: 7689147-1-BKS

Prep Method: SW5030B

Date Prep: 10.29.19

LCSD Sample Id: 7689147-1-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	0.103	103	0.112	112	70-130	8	35	mg/kg	10.29.19 21:23	
Toluene	<0.00200	0.100	0.0973	97	0.108	108	70-130	10	35	mg/kg	10.29.19 21:23	
Ethylbenzene	<0.00200	0.100	0.0992	99	0.112	112	70-130	12	35	mg/kg	10.29.19 21:23	
m,p-Xylenes	<0.00400	0.200	0.203	102	0.230	115	70-130	12	35	mg/kg	10.29.19 21:23	
o-Xylene	<0.00200	0.100	0.101	101	0.117	117	70-130	15	35	mg/kg	10.29.19 21:23	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		97		99		70-130	%	10.29.19 21:23
4-Bromofluorobenzene	98		104		115		70-130	%	10.29.19 21:23

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3105876

Parent Sample Id: 640977-001

Matrix: Soil

MS Sample Id: 640977-001 S

Prep Method: SW5030B

Date Prep: 10.29.19

MSD Sample Id: 640977-001 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	0.0878	88	0.0893	90	70-130	2	35	mg/kg	10.29.19 22:03	
Toluene	<0.00200	0.100	0.0847	85	0.0852	86	70-130	1	35	mg/kg	10.29.19 22:03	
Ethylbenzene	<0.00200	0.100	0.0863	86	0.0860	87	70-130	0	35	mg/kg	10.29.19 22:03	
m,p-Xylenes	<0.00401	0.200	0.176	88	0.175	88	70-130	1	35	mg/kg	10.29.19 22:03	
o-Xylene	<0.00200	0.100	0.0881	88	0.0874	88	70-130	1	35	mg/kg	10.29.19 22:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		100		70-130	%	10.29.19 22:03
4-Bromofluorobenzene	111		108		70-130	%	10.29.19 22:03

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



## Chain of Custody

Work Order No: 1041128

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 508-3334  
Midland, TX (432) 704-5440 EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296

Hobbs, NM (575) 392-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

www.xenco.com Page 1 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slc@lternv.com, dmoir@lternv.com

Project Name:	210 DeWane C	Turn Around	
Project Number:	012118038	Routine	<input checked="" type="checkbox"/>
P.O. Number:		Rush:	
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT	Temp Blank:	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Wet Ice:	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Temperature (°C):	0.2	Thermometer ID				
Received In tact:	Yes	<input checked="" type="checkbox"/> No		Correction Factor:	-0.2	
Cooler Custody Seals:	Yes	<input checked="" type="checkbox"/> No		Total Containers:	14	
Sample Custody Seals:	Yes	<input checked="" type="checkbox"/> No				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST										Work Order Notes
					Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)							
PH17	S	10-24-19	1100	1	1	X	X	X							
PH17A	S	10-24-19	1110	2	1	Y	X	Y							
PH18	S	10-24-19	1125	1	1	Y	Y	Y							
PH18A	S	10-24-19	1130	2	1	X	X	Y							
PH19	S	10-24-19	1135	1	1	X	Y	Y							
PH19A	S	10-24-19	1140	2	1	X	X	X							
PH20	S	10-24-19	1150	1	1	X	X	X							
PH20A	S	10-24-19	1155	2	1	X	X	X							
PH21	S	10-24-19	1210	1	1	Y	X	X							
PH21A	S	10-24-19	1215	2	1	X	X	X							

Total 200.7 / 6010 200.8 / 6020:

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

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 to Xenco. 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 \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	10/25/19 09:55 AM	<i>[Signature]</i>	<i>[Signature]</i>	10/25/19 10:30





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

# Chain of Custody

Work Order No: 641128

www.xenco.com Page 2 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slc@ltenv.com, dmoir@ltenv.com

Project Name:	PLU plavore c	Turn Around	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush
Project Number:	012918038	Due Date:	
P.O. Number:			
Sampler's Name:	Spencer Lo		

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST										Work Order Notes
					Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)							
PH22	S	10-24-14	1225	1	1	X	X	X							
PH22A	S	10-24-14	1235	2	1	X	X	X							
PH23	S	10-24-14	1245	1	1	X	X	X							
PH23A	S	10-24-14	1250	2	1	X	X	X							
PH24	S	10-24-14	1310	1	1	X	X	X							
PH24A	S	10-24-14	1320	2	1	X	X	X							

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	10/25/14 09:55 AM	<i>[Signature]</i>	<i>[Signature]</i>	10/25/14 10:30



## Inter-Office Shipment

Page 1 of 3

IOS Number **50900**

Date/Time: 10/25/19 15:50

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 776821232900

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
641128-001	S	PH17	10/24/19 11:00	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-001	S	PH17	10/24/19 11:00	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-001	S	PH17	10/24/19 11:00	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-002	S	PH17A	10/24/19 11:10	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-002	S	PH17A	10/24/19 11:10	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-002	S	PH17A	10/24/19 11:10	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-003	S	PH18	10/24/19 11:25	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-003	S	PH18	10/24/19 11:25	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-003	S	PH18	10/24/19 11:25	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-004	S	PH18A	10/24/19 11:30	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-004	S	PH18A	10/24/19 11:30	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-004	S	PH18A	10/24/19 11:30	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-005	S	PH19	10/24/19 11:35	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-005	S	PH19	10/24/19 11:35	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-005	S	PH19	10/24/19 11:35	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-006	S	PH19A	10/24/19 11:40	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-006	S	PH19A	10/24/19 11:40	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-006	S	PH19A	10/24/19 11:40	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-007	S	PH20	10/24/19 11:50	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-007	S	PH20	10/24/19 11:50	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-007	S	PH20	10/24/19 11:50	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-008	S	PH20A	10/24/19 11:55	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-008	S	PH20A	10/24/19 11:55	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-008	S	PH20A	10/24/19 11:55	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-009	S	PH21	10/24/19 12:10	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	





## Inter-Office Shipment

Page 2 of 3

IOS Number **50900**

Date/Time: 10/25/19 15:50

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 776821232900

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
641128-009	S	PH21	10/24/19 12:10	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-009	S	PH21	10/24/19 12:10	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-010	S	PH21A	10/24/19 12:15	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-010	S	PH21A	10/24/19 12:15	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-010	S	PH21A	10/24/19 12:15	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-011	S	PH22	10/24/19 12:25	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-011	S	PH22	10/24/19 12:25	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-011	S	PH22	10/24/19 12:25	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-012	S	PH22A	10/24/19 12:35	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-012	S	PH22A	10/24/19 12:35	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-012	S	PH22A	10/24/19 12:35	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-013	S	PH23	10/24/19 12:45	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-013	S	PH23	10/24/19 12:45	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-013	S	PH23	10/24/19 12:45	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-014	S	PH23A	10/24/19 12:50	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-014	S	PH23A	10/24/19 12:50	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-014	S	PH23A	10/24/19 12:50	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-015	S	PH24	10/24/19 13:10	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-015	S	PH24	10/24/19 13:10	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-015	S	PH24	10/24/19 13:10	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-016	S	PH24A	10/24/19 13:20	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-016	S	PH24A	10/24/19 13:20	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-016	S	PH24A	10/24/19 13:20	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By:

Received By:

Released to Imaging: 10/18/2022 11:59:20 AM



## Inter-Office Shipment

Page 3 of 3

**IOS Number 50900**

Date/Time: 10/25/19 15:50

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 776821232900

E-Mail: jessica.kramer@xenco.com

### Inter Office Shipment or Sample Comments:

Date Relinquished:

A handwritten signature in black ink, appearing to read 'Elizabeth McClellan', is written over a light gray rectangular background.

Elizabeth McClellan

10/25/2019

Date Received:

A handwritten signature in black ink, appearing to read 'Brianna Teel', is written over a light gray rectangular background.

Cooler Temperature:

Brianna Teel

10/28/2019 07:26

0.4



## XENCO Laboratories

## Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 50900

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 10/25/2019 03:50 PM

Received By: Brianna Teel

Date Received: 10/28/2019 07:26 AM

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#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?	Yes
#8 IOS agrees with sample label(s)/matrix?	No
#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:

Brianna Teel

Date: 10/28/2019



# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/25/2019 10:32:00 AM

Work Order #: 641128

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

**Sample Receipt Checklist****Comments**

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 10/25/2019

Checklist reviewed by:

Jessica Kramer

Date: 10/28/2019



**District I**

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

**District II**

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

**District III**

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

**District IV**

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

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

CONDITIONS

Action 5010

**CONDITIONS**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 5010
	Action Type: [C-141] Release Corrective Action (C-141)

**CONDITIONS**

Created By	Condition	Condition Date
jharimon	Depth to groundwater is not adequately identified. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided. If evidence of depth to ground water within a ½ mile radius of the site cannot be provided, impacted soils will need to meet Table 1 Closure Criteria for ground water at a depth of 50 feet or less. This release does appear to have been vertically and horizontally defined to 4' and does appear to meet the strictest remediation requirements in Table 1 19.15.29.12 NMAC.	10/18/2022