# NAB1512157315

# 2RP-2978

XTO Energy Co.

DEFERAL REQUEST

**Poker Lake Unit 274**

**Tank Battery**

05/08/2019

LT Environmental, Inc.
3300 North "A" Street
Building 1, Unit 103
Midland, Texas 79705
432.704.5178

May 8, 2019

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

**RE: Deferral Request**
**Poker Lake Unit 274 Tank Battery**
**Remediation Permit Number 2RP-2978**
**Eddy County, New Mexico**

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following report detailing excavation of impacted soil and confirmation soil sampling activities at the Poker Lake Unit (PLU) 274 Tank Battery (Site) in Unit O, Section 12, Township 24 South, Range 29 East, in Eddy County, New Mexico (Figure 1). The purpose of the excavation and soil sampling activities was to address impacts to soil after a release of crude oil and produced water at the Site.

The release was discovered on April 20, 2015, and was the result of a failed connection on the water leg of the heater-treater. Approximately 13 barrels (bbls) of crude oil and 9 bbls of produced water were released within the process equipment containment, and a small area of pasture south of the well pad was affected by overspray. Approximately 3,700 square feet within the containment and pasture area south of the well pad were affected by the release. A vacuum truck was dispatched to the Site to recover the free-standing fluid; approximately 3 bbls of crude oil and 2 bbls of produced water were recovered. The former operator reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on April 24, 2015, and was assigned Remediation Permit (RP) Number 2RP-2978 (Attachment 1). Although this release occurred while the facility was operated by the previous operator, XTO is the current operator and is committed to addressing any releases that remain unresolved.

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

results of the soil sampling events, XTO is submitting this deferral report, describing remediation that has occurred and requesting deferral of final remediation.

## BACKGROUND

According to Section 12 of 19.15.29 NMAC, LTE applied the closure criteria in accordance with NMOCD Table 1, *Closure Criteria for Soils Impacted by a Release*. Depth to groundwater at the Site is estimated to be between 51 and 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well is United States Geological Survey (USGS) well 321321103544101 24S.30E.18.22144, located approximately 1.5 miles east of the Site, with a depth to groundwater of 168.08 feet bgs. The total depth of the water well is not determined. The water well is approximately 86 feet higher in elevation than the Site. The nearest continuously flowing water or significant watercourse to the Site is an unnamed dry wash located approximately 700 feet north 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 karst zone. Based on these criteria, the following NMOCD Table 1 closure criteria were applied: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 2,500 mg/kg total petroleum hydrocarbons (TPH); 1,000 mg/kg TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO); and 10,000 mg/kg chloride. 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. Additionally, the final excavation and soil sampling activities were completed after a March 21, 2019, meeting between XTO and the U.S. Bureau of Land Management (BLM) during which BLM indicated a preferred chloride closure criteria of 600 mg/kg for the top 4 feet of all impacted areas on and off pad.

## PRELIMINARY SOIL SAMPLING

During August 2018, an LTE scientist collected nine preliminary soil samples (SS01 through SS09) within the release area to assess the lateral extent of impacted soil. The soil sample locations, as depicted on Figure 2, were selected based on information provided on the initial Form C-141 and field observations. To eliminate the effects from weathering and natural degradation of contaminants at the ground surface, the soil samples were collected from each sample location from a depth of 0.5 feet or 1 foot bgs. The soil samples were screened for volatile aromatic hydrocarbons and chlorides using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples were shipped at 4 degrees Celsius (°C) under strict chain-of-custody procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX by United States

Environmental Protection Agency (USEPA) Method 8021B, TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) by USEPA Method 8015M/D, and chloride by USEPA Method 300.0.

Laboratory analytical results for preliminary soil samples SS01 through SS09 indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria and chloride concentrations were below 600 mg/kg. Laboratory analytical results are presented on Figure 2 and summarized in Table 1, and the laboratory analytical report is included in Attachment 2. Based on the soil sample analytical results and visible hydrocarbon staining, additional delineation activities were required to assess the vertical extent of impacted soil.

## DELINEATION ACTIVITIES

During April 2019, LTE personnel returned to the Site to complete borehole delineation activities via hand auger. Boreholes were advanced at four of the preliminary soil sample locations (SS02 through SS05) and at three additional locations (SS10 through SS12) within the release area to further delineate the lateral and vertical extent of impacted soil. The boreholes were advanced to depths ranging from 1 foot to 2.5 feet bgs. Soil was field screened in the boreholes using a PID and Hach® chloride QuanTab® test strips. Two delineation soil samples were collected for laboratory analysis from each borehole SS02 through SS05, SS10, and SS11 from depths ranging from 1 foot to 2 feet bgs. Three delineation soil samples were collected for laboratory analysis from borehole SS12 from depths of 0.5 feet, 1 foot, and 2.5 feet bgs. The delineation soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Midland, Texas. The soil sample locations and depths are depicted on Figure 2 and soil sample logs are included in Attachment 3.

Laboratory analytical results indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria in delineation soil samples SS02A, SS04A, SS05A, SS10/SS10A, SS11/SS11A, and SS12B. Laboratory analytical results indicated that GRO/DRO and TPH concentrations exceeded the NMOCD Table 1 closure criteria in delineation soil samples SS03A, SS12, and SS12A, collected from boreholes SS03 and SS12. Laboratory analytical indicated that chloride concentrations were below 600 mg/kg in all delineation soil samples. Based on the laboratory analytical results, excavation was required in the pasture area south of the well pad in the area around borehole SS03. Excavation could not be completed in the area around borehole SS12 due to the proximity of active pipelines; therefore, the impacted soil was delineated vertically to 2.5 feet bgs by delineation soil sample SS12B. Based on visible hydrocarbon staining, excavation was warranted near the release point within the process equipment containment area. Laboratory analytical results are presented on Figure 2 and summarized in Table 1, and the laboratory analytical reports are included in Attachment 2.

## EXCAVATION ACTIVITIES

On April 30, 2019, an LTE scientist returned to the Site to oversee excavation of impacted soil as indicated by laboratory analytical results for delineation soil sample SS03A and visible hydrocarbon staining within the process equipment containment near the release point. To delineate impacts to soil and direct excavation activities, LTE screened soil using a PID and Hach® chloride QuanTab® test strips. Impacted soil was excavated in the pasture area south of the well pad around borehole SS03 to a depth of 4 feet bgs. Due to the presence of active process equipment and pipelines in the hydrocarbon stained area near the release point, impacted soil was excavated via hydrovac to the extent possible to a depth of 0.25 feet bgs. Following removal of impacted soil, LTE collected 5-point composite soil samples from the sidewalls and/or floor of the excavations. The 5-point composite soil samples were collected by depositing 5 aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing.

The excavation in the pasture area south of the well pad measured approximately 130 square feet in area with a depth of 4 feet bgs. Composite soil samples SW01 and SW02 were collected from the sidewalls of the excavation from a depth of 0 to 4 feet bgs. Composite soil sample FS02 was collected from the floor of the excavation from a depth of 4 feet bgs.

The excavation within the process equipment containment area measured approximately 200 square feet in area with a depth of 0.25 feet bgs. Due to the shallow depth of the excavation, one composite soil sample (FS01) was collected from the floor of the excavation from a depth of 0.25 feet bgs. The excavation soil samples were collected, handled, and analyzed as described above and submitted to Xenco Laboratories in Midland, Texas.

The excavation soil sample locations and the horizontal extents of the excavations are presented on Figure 3. Approximately 20 cubic yards of impacted soil were removed from the excavations. The impacted soil was transported to and properly disposed of at the Lea Land landfill facility in Hobbs, New Mexico.

## ANALYTICAL RESULTS

Laboratory analytical results indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria in preliminary soil samples SS01 through SS09, and delineation soil samples SS02A, SS04A, SS05A, SS10/SS10A, SS11/SS11A, and SS12B. Laboratory analytical indicated that chloride concentrations were below 600 mg/kg in all preliminary soil samples, delineation soil samples, and excavation soil samples.

Laboratory analytical results indicated that GRO/DRO and TPH concentrations exceeded the NMOCD Table 1 closure criteria in delineation soil samples SS03A, SS12, and SS12A collected from boreholes SS03 and SS12. The impacted soil was excavated from the area around borehole SS03, and laboratory analytical results for the subsequent excavation sidewall samples (SW01 and

SW02) and excavation floor sample (FS02) collected from the final excavation extent indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria, and no further excavation was required in this area.

Impacted soil was excavated to the extent possible in the hydrocarbon stained area within the process equipment containment, and laboratory analytical results for the subsequent excavation floor sample (FS01) collected from the final excavation extent indicated that GRO/DRO and TPH concentrations exceeded the NMOCD Table 1 closure criteria. Further excavation of impacted soil was limited by active process equipment and pipelines. XTO safety policy restricts soil disturbing activities to a 2-foot radius of any on-site process equipment and pipelines. This XTO safety policy is established to protect workers and to reduce the likelihood of compromising the foundation of the production equipment and pipelines. This policy was enforced where impacted soil was identified within two feet of active pipelines in delineation soil samples SS12 and SS12A and excavation soil sample FS01. Laboratory analytical results are summarized in Table 1, and the complete laboratory analytical reports are included in Attachment 2.

## DEFERRAL REQUEST

A total of 20 cubic yards of impacted soil were excavated from the Site; however, residual impacted soil was left in place for compliance with the XTO safety policy regarding earth-moving activities within 2-feet of active process equipment and pipelines. Laboratory analytical results for delineation soil samples SS12 and SS12A collected from borehole SS12 and excavation soil sample FS01 collected from the excavation within the process equipment containment area, indicated that soil with GRO/DRO and TPH concentrations exceeding the NMOCD Table 1 closure criteria was left in place within two feet of active pipelines. An estimated 50 cubic yards of impacted soil remain in place within the process equipment containment area beneath and around active pipelines assuming a maximum 2.5-foot depth based on soil sample SS12B that was compliant with the NMOCD Table 1 closure criteria. The impacted soil remaining in place is delineated laterally and vertically by soil samples SS02/SS02A, SS04/SS04A, SS05/SS05A, SS10/SS10A, SS11/SS11A, SS12B, SW02, and FS02.

XTO requests to backfill the existing excavations and complete remediation during any major future well pad construction/alteration or final plugging and abandonment, whichever occurs first. LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. The free-standing fluids were recovered during initial response activities, and no saturated soil remains in place. Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. XTO requests deferral of final remediation for RP Number 2RP-2978. Upon approval of this deferral request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing conditions. An updated NMOCD Form C-141 is included in Attachment 1. A photographic log of the Site is included in Attachment 4.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Ashley L. Ager

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO Energy, Inc.
Michael Bratcher, NMOCD
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD
Jim Amos, U.S. Bureau of Land Management
Crystal Weaver, U.S. Bureau of Land Management

Attachments:

| | |
|---|---|
| Figure 1 | Site Location Map |
| Figure 2 | Preliminary and Delineation Soil Sample Locations |
| Figure 3 | Excavation Soil Sample Locations |
| Table 1 | Soil Analytical Results |
| Attachment 1 | Initial/Final NMOCD Form C-141 (2RP-2978) |
| Attachment 2 | Laboratory Analytical Reports |
| Attachment 3 | Soil Sampling Logs |
| Attachment 4 | Photographic Log |


**LEGEND**

SITE LOCATION

IMAGE COURTESY OF ESRI/USGS

0 2,000 4,000

Feet

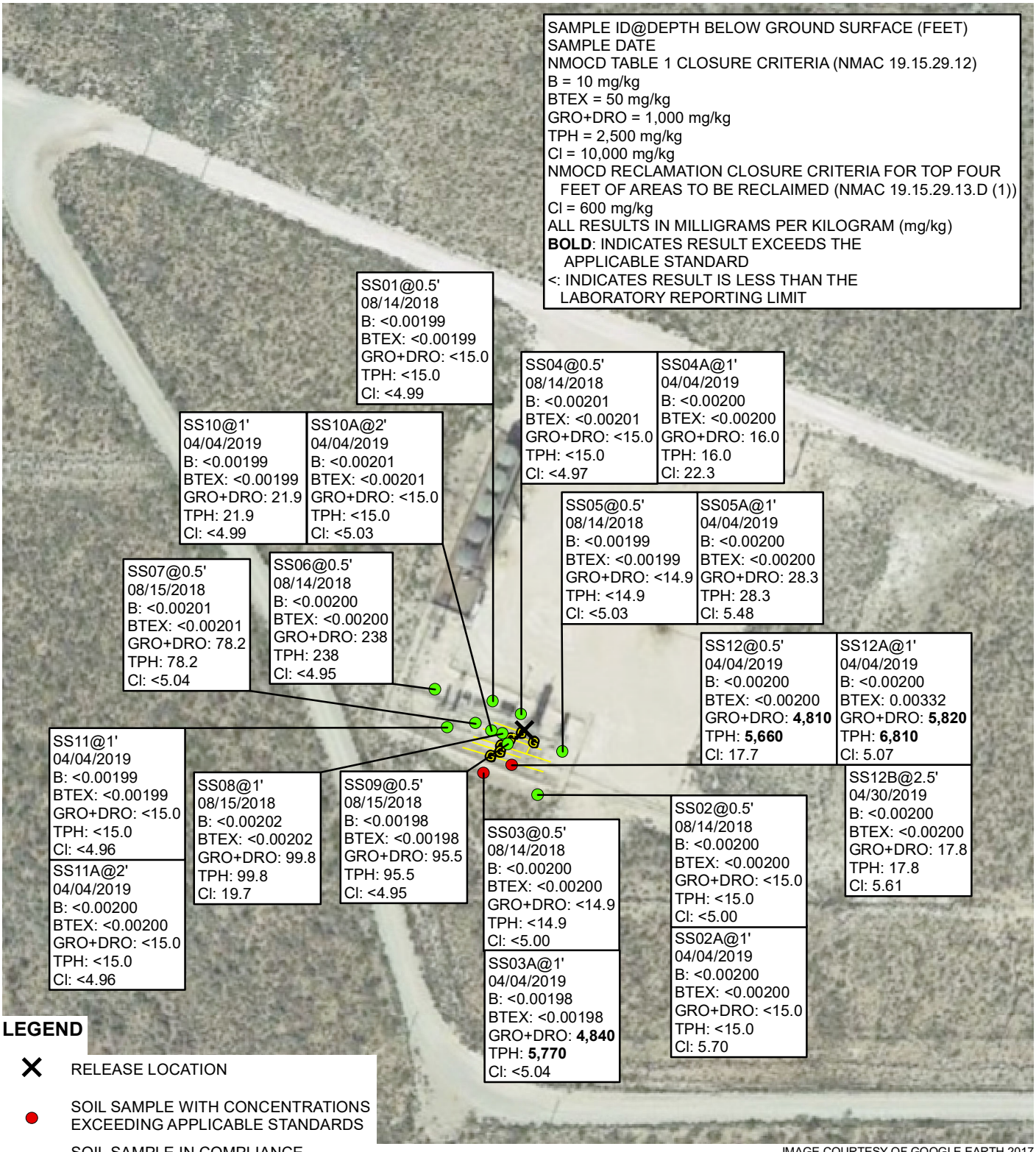
N

NEW MEXICO

NOTE: REMEDIATION PERMIT NUMBER 2RP-2978

FIGURE 1
SITE LOCATION MAP
POKER LAKE UNIT 274 TANK BATTERY
UNIT O SEC 12 T24S R29E
EDDY COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

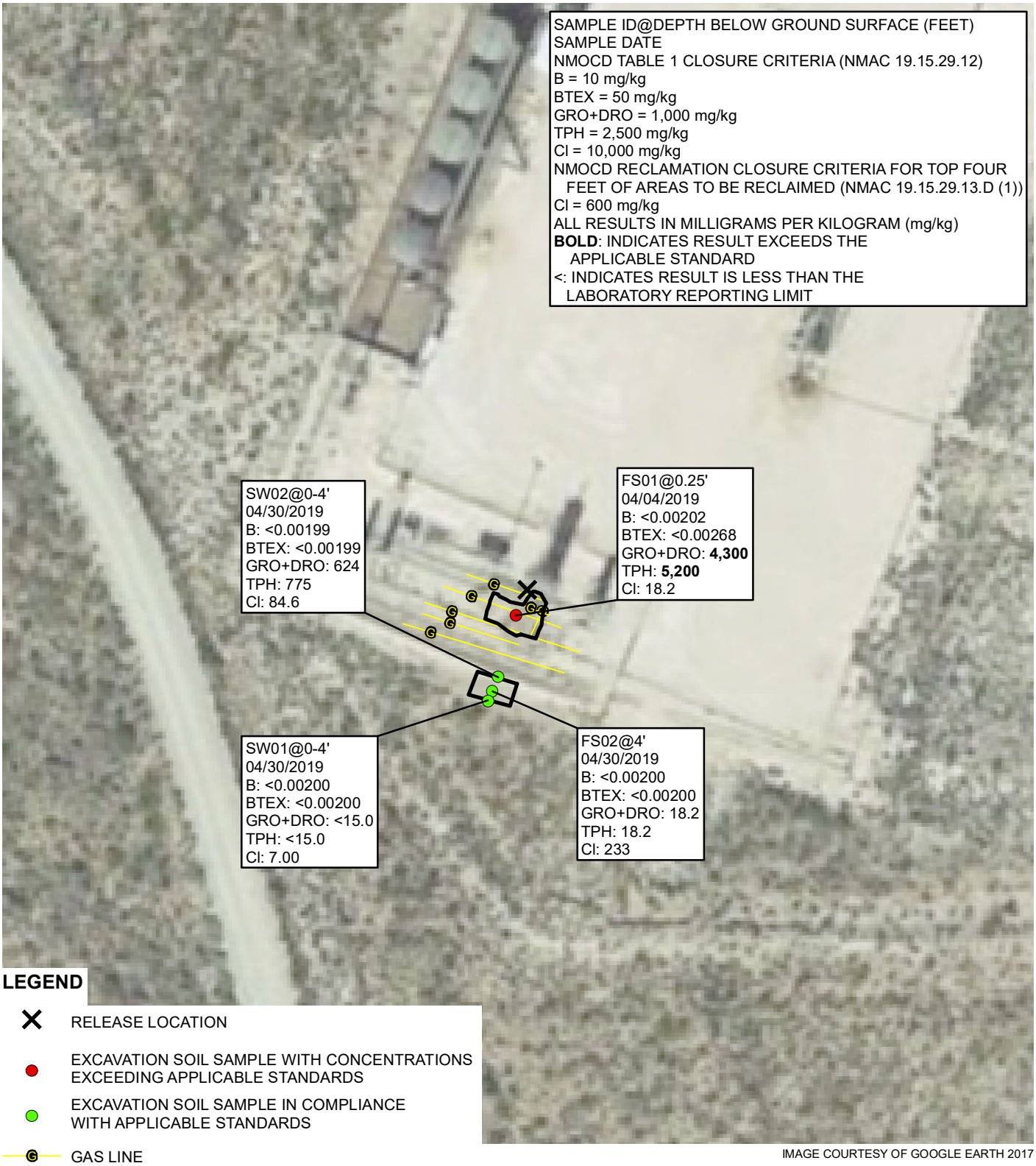
P:\XTO Energy\GIS\MXD\012918060_PLU-274 BATTERY\012918060_FIG01_SL_2018_2978.mxd




B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO – GASOLINE RANGE ORGANICS
DRO – DIESEL RANGE ORGANICS
TPH – TOTAL PETROLEUM HYDROCARBONS
Cl - CHLORIDE
NMAC – NEW MEXICO ADMINISTRATIVE CODE
NMOCD – NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-2978

FIGURE 2
PRELIMINARY AND DELINEATION
SOIL SAMPLE LOCATIONS
POKER LAKE UNIT 274 TANK BATTERY
UNIT O SEC 12 T24S R29E
EDDY COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

P:\XTO Energy\GIS\MXD\012917041_PLU ROSS RANCH_33-25-30 TB\012918060_FIG02_PRELIM DELIN_2018_2978.mxd




B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO – GASOLINE RANGE ORGANICS
DRO – DIESEL RANGE ORGANICS
TPH – TOTAL PETROLEUM HYDROCARBONS
Cl - CHLORIDE
NMAC – NEW MEXICO ADMINISTRATIVE CODE
NMOCD – NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-2978

FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
POKER LAKE UNIT 274 TANK BATTERY
UNIT O SEC 12 T24S R29E
EDDY COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

P:\XTO Energy\GIS\MXD\012918060_PLU-274 BATTERY\012918060_FIG03_EXC_2978_1.mxd

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

**POKER LAKE UNIT 274 TANK BATTERY**
**REMEDIATION PERMIT NUMBER 2RP-2978**
**EDDY COUNTY, NEW MEXICO**
**XTO ENERGY, INC.**

| Sample Name | Sample Depth (feet bgs) | Sample Date | Benzene (mg/kg) | Toluene (mg/kg) | Ethyl-benzene (mg/kg) | Total Xylenes (mg/kg) | Total BTEX (mg/kg) | GRO (mg/kg) | DRO (mg/kg) | ORO (mg/kg) | Total GRO + DRO (mg/kg) | TPH (mg/kg) | Chloride (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SS01 | 0.5 | 08/14/2018 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <15.0 | <15.0 | <15.0 | <15.0 | <15.0 | <4.99 |
| SS02 | 0.5 | 08/14/2018 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <15.0 | <15.0 | <15.0 | <15.0 | <15.0 | <5.00* |
| SS03 | 0.5 | 08/14/2018 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <14.9 | <14.9 | <14.9 | <14.9 | <14.9 | <5.00* |
| SS04 | 0.5 | 08/14/2018 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <15.0 | <15.0 | <15.0 | <15.0 | <15.0 | <4.97 |
| SS05 | 0.5 | 08/14/2018 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <14.9 | <14.9 | <14.9 | <14.9 | <14.9 | <5.03 |
| SS06 | 0.5 | 08/14/2018 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <15.0 | 238 | <15.0 | 238 | 238 | <4.95 |
| SS07 | 0.5 | 08/15/2018 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <15.0 | 78.2 | <15.0 | 78.2 | 78.2 | <5.04 |
| SS08 | 1 | 08/15/2018 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <15.0 | 99.8 | <15.0 | 99.8 | 99.8 | 19.7 |
| SS09 | 0.5 | 08/15/2018 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <15.0 | 95.5 | <15.0 | 95.5 | 95.5 | <4.95 |
| SS10 | 1 | 04/04/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <15.0 | 21.9 | <15.0 | 21.9 | 21.9 | <4.99 |
| SS11 | 1 | 04/04/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <15.0 | <15.0 | <15.0 | <15.0 | <15.0 | <4.96 |
| SS12 | 0.5 | 04/04/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <74.8 | 4,810 | 851 | **4,810** | **5,660** | 17.7 |
| SS02A | 1 | 04/04/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <15.0 | <15.0 | <15.0 | <15.0 | <15.0 | 5.70* |
| SS03A | 1 | 04/04/2019 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <74.9 | 4,840 | 927 | **4,840** | **5,770** | <5.04* |
| SS04A | 1 | 04/04/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <15.0 | 16.0 | <15.0 | 16.0 | 16.0 | 22.3 |
| SS05A | 1 | 04/04/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <15.0 | 28.3 | <15.0 | 28.3 | 28.3 | 5.48 |
| SS10A | 2 | 04/04/2019 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <15.0 | <15.0 | <15.0 | <15.0 | <15.0 | <5.03 |
| SS11A | 2 | 04/04/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <15.0 | <15.0 | <15.0 | <15.0 | <15.0 | <4.96 |
| SS12A | 1 | 04/04/2019 | <0.00200 | 0.00332 | <0.00200 | <0.00200 | 0.00332 | <74.9 | 5,820 | 993 | **5,820** | **6,810** | 5.07 |
| FS01 | 0.25 | 04/04/2019 | <0.00202 | 0.00268 | <0.00202 | <0.00202 | 0.00268 | <74.9 | 4,300 | 901 | **4,300** | **5,200** | 18.2 |
| FS02 | 4 | 04/30/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <15.0 | 18.2 | <15.0 | 18.2 | 18.2 | 233* |
| SW01 | 0 - 4 | 04/30/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <15.0 | <15.0 | <15.0 | <15.0 | <15.0 | 7.00* |
| SW02 | 0 - 4 | 04/30/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <15.0 | 624 | 151 | 624 | 775 | 84.6* |
| SS12B | 2.5 | 04/30/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <15.0 | 17.8 | <15.0 | 17.8 | 17.8 | 5.61 |
| **NMOCD Table 1 Closure Criteria** | | | **10** | NE | NE | NE | **50** | NE | NE | NE | **1,000** | **2,500** | **10,000** |

**Notes:**

bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, and total xylenes
DRO - diesel range organics
GRO - gasoline range organics
mg/kg - milligrams per kilogram
MRO - motor oil range organics
NMAC - New Mexico Administrative Code
NMOCD - New Mexico Oil Conservation Division
NE - not established
TPH - total petroleum hydrocarbons
**Bold** - indicates result exceeds the applicable regulatory standard
< - indicates result is below laboratory reporting limits
Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018
* - 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-2978)

NM OIL CONSERVATION
ARTESIA DISTRICT
APR 29 2015
RECEIVED

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

nAB1512157315

## OPERATOR

☒ Initial Report ☐ Final Report

| | |
|---|---|
| Name of Company: BOPCO, L.P. 260737 | Contact: Bradley Blevins |
| Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220 | Telephone No. 575-887-7329 |
| Facility Name: Poker Lake Unit 274 Tank Battery | Facility Type: Exploration and Production |

| | | |
|---|---|---|
| Surface Owner: Federal | Mineral Owner: Federal | API No. 30-015-35138 |

## LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|---|---|---|---|---|---|---|---|---|
| O | 12 | 24S | 29E | 360 | South | 2310 | East | Eddy |

**Latitude:** N 32.225443° **Longitude:** W 103.936917°

## NATURE OF RELEASE

| | | |
|---|---|---|
| Type of Release: crude oil and produced water | Volume of Release: 13 bbls oil and 9 bbls water | Volume Recovered: 3 bbls oil and 2 bbls water |
| Source of Release: water leg connection on the heater treater failed | Date and Hour of Occurrence: 4/20/15 @ 12:24 pm | Date and Hour of Discovery: 4/20/15 @ 12:24 pm |
| Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required | If YES, To Whom? OCD, BLM via email | |
| By Whom? Bradley Blevins | Date and Hour: 4/21/15 @ 10:07 am | |
| Was a Watercourse Reached? ☐ Yes ☒ No | If YES, Volume Impacting the Watercourse: Not Applicable | |

If a Watercourse was Impacted, Describe Fully.* Not Applicable

Describe Cause of Problem and Remedial Action Taken.*
A connection on the water leg of the heater treater failed. The connection was repaired.

Describe Area Affected and Cleanup Action Taken.*
The release impacted approximately 3,700 sq. ft. of tank battery and well pad area including an area misted on the south side of the tank battery location. Vacuum truck recovered 5 bbls of fluid. The area will be remediated 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: Bradley Blevins | OIL CONSERVATION DIVISION |
| Printed Name: Bradley Blevins | Approved by Environmental Specialist: |
| Title: Assistant Remediation Foreman | Approval Date: 5/1/15 Expiration Date: |
| E-mail Address: bblevins@basspet.com | Conditions of Approval: Remediation per O.C.D. Rules & Guidelines SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 6/1/15 Attached ☐ |
| Date: 4-24-15 Phone: 432-214-3704 | |

* Attach Additional Sheets If Necessary

2RP-2978

## Patterson, Heather, EMNRD

**From:** Blevins, Bradley <BBlevins@BassPet.Com>
**Sent:** Tuesday, April 21, 2015 10:07 AM
**To:** Bratcher, Mike, EMNRD; Patterson, Heather, EMNRD; Amos, James
**Cc:** Blevins, Bradley; Savoie, Tony A.
**Subject:** PLU 274 Release
**Attachments:** photo.jpg

All,

BOPCO EHS was notified of a release at the PLU 274 Battery. A connection on the water leg of the heater treater failed releasing fluid to the ground surface. All of the free standing fluid remained inside the firewall containment area. A small area south of the production equipment does have some overspray, this area will be micro blazed. I will follow up with an initial C-141, if you have any questions please let me know. Thanks
13 barrels of oil was released
9 barrels of PW was released
5 barrels of fluid was recovered by vacuum truck.

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

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-2978 |
| 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-2978 |
| Contact mailing address 522 W. Mermod, Suite 704 Carlsbad, NM 88220 | |

## Location of Release Source

Latitude 32.225443 Longitude -103.936917
*(NAD 83 in decimal degrees to 5 decimal places)*

| | |
|---|---|
| Site Name: Poker Lake Unit 274 Tank Battery | Site Type: Exploration and Production |
| Date Release Discovered: 4/20/15 | API# *(if applicable):* 30-015-35138 |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| O | 12 | 24S | 29E | 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)

| | | |
|---|---|---|
| ☒ Crude Oil | Volume Released (bbls): 13 bbls | Volume Recovered (bbls): 3 bbls |
| ☒ Produced Water | Volume Released (bbls): 9 bbls | Volume Recovered (bbls): 2 bbls |
| | Is the concentration of dissolved chloride in the produced water >10,000 mg/l? | ☐ Yes ☐ No |
| ☐ Condensate | Volume Released (bbls) | Volume Recovered (bbls) |
| ☐ Natural Gas | Volume Released (Mcf) | Volume Recovered (Mcf) |
| ☐ Other (describe) | Volume/Weight Released (provide units) | Volume/Weight Recovered (provide units) |

Cause of Release:
A connection on the water leg of the heater treater failed. All of the free standing fluid remained inside the firewall containment area. The release impacted approximately 3,700 sq. ft. of tank battery and well pad area including an area misted on the south side of the tank battery location. A vacuum truck recovered 5 bbls of fluid.

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | |
| District RP | 2RP-2978 |
| Facility ID | |
| Application ID | |

| | |
|---|---|
| Was this a major release as defined by 19.15.29.7(A) NMAC?<br><br>☐ Yes ☒ No | If YES, for what reason(s) does the responsible party consider this a major release?<br><br>Released volume was less than 25 bbls. |
| If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? | |

## Initial Response

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

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not 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: Kyle Littrell Title: SH&E Coordinator

Signature: _____ Date: 5/8/2019

email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331

**OCD Only**

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | |
| District RP | 2RP-2978 |
| 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? | 51-100 (ft bgs) |
| Did this release impact groundwater or surface water? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse? | ☐ Yes ☒ 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)? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church? | ☐ Yes ☒ 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? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 1000 feet of any other fresh water well or spring? | ☐ Yes ☒ No |
| Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of a wetland? | ☐ Yes ☒ No |
| Are the lateral extents of the release overlying a subsurface mine? | ☐ Yes ☒ No |
| Are the lateral extents of the release overlying an unstable area such as karst geology? | ☐ Yes ☒ No |
| Are the lateral extents of the release within a 100-year floodplain? | ☐ Yes ☒ No |
| Did the release impact areas **not** on an exploration, development, production, or storage site? | ☒ Yes ☐ 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-2978 |
| 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 Coordinator

Signature: Date: 5/8/2019

email: Kyle_Littrell@xtoenergy.com Telephone: (432)-221-7331

**OCD Only**

Received by: Date:

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | |
| District RP | 2RP-2978 |
| Facility ID | |
| Application ID | |

# Remediation Plan

**Remediation Plan Checklist:** ***Each of the following items must be included in the plan.***

☐ Detailed description of proposed remediation technique
☐ Scaled sitemap with GPS coordinates showing delineation points
☐ Estimated volume of material to be remediated
☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

**Deferral Requests Only:** ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☒ Extents of contamination must be fully delineated.

☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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 Coordinator

Signature: _____ Date: 5/8/2019

email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331

**OCD Only**

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☒ Deferral Approved
SEE BELOW

Signature: Bradford Billings Date: 03/19/2020

Deferral is approved, as only very small area was not verticallydefined, and other close by sample aeas were vertically delineated. Please make OCD aware of any timing that might llow for final delineation and remediation.

# ATTACHMENT 2: LABORATORY ANALYTICAL REPORTS

# Analytical Report 596508

## for

## LT Environmental, Inc.

**Project Manager: Adrian Baker**

**PLU 274**

**28-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)

28-AUG-18

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

Reference: XENCO Report No(s): **596508**
**PLU 274**
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) 596508. 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. 596508 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

**Jessica Kramer**
Project Assistant

# Sample Cross Reference 596508

## LT Environmental, Inc., Arvada, CO

PLU 274

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| SS01 | S | 08-14-18 11:45 | 6 In | 596508-001 |
| SS02 | S | 08-14-18 12:05 | 6 In | 596508-002 |
| SS03 | S | 08-14-18 12:10 | 6 In | 596508-003 |
| SS04 | S | 08-14-18 14:10 | 6 In | 596508-004 |
| SS05 | S | 08-14-18 14:40 | 6 In | 596508-005 |
| SS06 | S | 08-14-18 15:45 | 6 In | 596508-006 |

# CASE NARRATIVE

***Client Name: LT Environmental, Inc.***
***Project Name: PLU 274***

Project ID:
Work Order Number(s): *596508*

Report Date: *28-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-3061240 Inorganic Anions by EPA 300
Nitrate as N RPD was outside laboratory control limits.
Samples in the analytical batch are: 596508-001

Batch: LBA-3061402 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

# Certificate of Analysis Summary 596508

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU 274

**Project Id:**
**Contact:** Adrian Baker
**Project Location:** Carlsbad, NM

**Date Received in Lab:** Tue Aug-21-18 12:57 pm
**Report Date:** 28-AUG-18
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 596508-001 | | 596508-002 | | 596508-003 | | 596508-004 | | 596508-005 | | 596508-006 | |
| | ***Field Id:*** | SS01 | | SS02 | | SS03 | | SS04 | | SS05 | | SS06 | |
| | ***Depth:*** | 6- In | | 6- In | | 6- In | | 6- In | | 6- In | | 6- In | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Aug-14-18 11:45 | | Aug-14-18 12:05 | | Aug-14-18 12:10 | | Aug-14-18 14:10 | | Aug-14-18 14:40 | | Aug-14-18 15:45 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Aug-27-18 12:00 | | Aug-27-18 12:00 | | Aug-27-18 12:00 | | Aug-27-18 12:00 | | Aug-27-18 12:00 | | Aug-27-18 12:00 | |
| | ***Analyzed:*** | Aug-27-18 19:12 | | Aug-27-18 19:32 | | Aug-27-18 19:52 | | Aug-27-18 20:13 | | Aug-27-18 20:33 | | Aug-27-18 20:53 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | 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 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00200 | 0.00200 |
| Toluene | | <0.00199 | 0.00199 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00200 | 0.00200 |
| Ethylbenzene | | <0.00199 | 0.00199 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00200 | 0.00200 |
| m,p-Xylenes | | <0.00398 | 0.00398 | <0.00400 | 0.00400 | <0.00401 | 0.00401 | <0.00402 | 0.00402 | <0.00398 | 0.00398 | <0.00399 | 0.00399 |
| o-Xylene | | <0.00199 | 0.00199 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00200 | 0.00200 |
| Total Xylenes | | <0.00199 | 0.00199 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00200 | 0.00200 |
| Total BTEX | | <0.00199 | 0.00199 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00200 | 0.00200 |
| **Inorganic Anions by EPA 300** | ***Extracted:*** | Aug-24-18 13:00 | | Aug-24-18 14:30 | | Aug-24-18 14:30 | | Aug-24-18 14:30 | | Aug-24-18 14:30 | | Aug-24-18 14:30 | |
| | ***Analyzed:*** | Aug-24-18 17:33 | | Aug-24-18 19:08 | | Aug-24-18 20:25 | | Aug-24-18 19:30 | | Aug-24-18 19:35 | | Aug-24-18 19:41 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | <4.99 | 4.99 | <5.00 | 5.00 | <5.00 | 5.00 | <4.97 | 4.97 | <5.03 | 5.03 | <4.95 | 4.95 |
| **TPH by SW8015 Mod** | ***Extracted:*** | 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 | |
| | ***Analyzed:*** | Aug-23-18 22:54 | | Aug-23-18 23:13 | | Aug-24-18 00:13 | | Aug-24-18 00:32 | | Aug-24-18 00:52 | | Aug-24-18 01:12 | |
| | ***Units/RL:*** | 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) | | <15.0 | 15.0 | <15.0 | 15.0 | <14.9 | 14.9 | <15.0 | 15.0 | <14.9 | 14.9 | 238 | 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 | | <15.0 | 15.0 | <15.0 | 15.0 | <14.9 | 14.9 | <15.0 | 15.0 | <14.9 | 14.9 | 238 | 15.0 |





Jessica Kramer
Project Assistant

# Certificate of Analytical Results 596508

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS01** | Matrix: | Soil | Date Received: | 08.21.18 12.57 |
| Lab Sample Id: | 596508-001 | Date Collected: | 08.14.18 11.45 | Sample Depth: | 6 In |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 08.24.18 13.00 | Basis: | Wet Weight |
| Seq Number: | 3061240 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <4.99 | 4.99 | mg/kg | 08.24.18 17.33 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 08.23.18 15.00 | Basis: | Wet Weight |
| Seq Number: | 3061132 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 08.23.18 22.54 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 15.0 | mg/kg | 08.23.18 22.54 | U | 1 |
| Oil Range Hydrocarbons (ORO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 08.23.18 22.54 | U | 1 |
| Total TPH | PHC635 | <15.0 | 15.0 | mg/kg | 08.23.18 22.54 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 94 | % | 70-135 | 08.23.18 22.54 | |
| o-Terphenyl | 84-15-1 | 95 | % | 70-135 | 08.23.18 22.54 | |

# Certificate of Analytical Results 596508

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS01** | Matrix: | Soil | Date Received: | 08.21.18 12.57 |
| Lab Sample Id: | 596508-001 | Date Collected: | 08.14.18 11.45 | Sample Depth: | 6 In |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | ALJ | | | % Moisture: | |
| Analyst: | ALJ | Date Prep: | 08.27.18 12.00 | Basis: | Wet Weight |
| Seq Number: | 3061402 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 08.27.18 19.12 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 08.27.18 19.12 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 08.27.18 19.12 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 08.27.18 19.12 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 08.27.18 19.12 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 08.27.18 19.12 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 08.27.18 19.12 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 95 | % | 70-130 | 08.27.18 19.12 | |
| 1,4-Difluorobenzene | 540-36-3 | 94 | % | 70-130 | 08.27.18 19.12 | |

# Certificate of Analytical Results 596508

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS02** | Matrix: | Soil | Date Received: | 08.21.18 12.57 |
| Lab Sample Id: | 596508-002 | Date Collected: | 08.14.18 12.05 | Sample Depth: | 6 In |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 08.24.18 14.30 | Basis: | Wet Weight |
| Seq Number: | 3061247 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <5.00 | 5.00 | mg/kg | 08.24.18 19.08 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 08.23.18 15.00 | Basis: | Wet Weight |
| Seq Number: | 3061132 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 08.23.18 23.13 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 15.0 | mg/kg | 08.23.18 23.13 | U | 1 |
| Oil Range Hydrocarbons (ORO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 08.23.18 23.13 | U | 1 |
| Total TPH | PHC635 | <15.0 | 15.0 | mg/kg | 08.23.18 23.13 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 90 | % | 70-135 | 08.23.18 23.13 | |
| o-Terphenyl | 84-15-1 | 89 | % | 70-135 | 08.23.18 23.13 | |

# Certificate of Analytical Results 596508

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS02** | Matrix: | Soil | Date Received: | 08.21.18 12.57 |
| Lab Sample Id: | 596508-002 | Date Collected: | 08.14.18 12.05 | Sample Depth: | 6 In |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | ALJ | | | % Moisture: | |
| Analyst: | ALJ | Date Prep: | 08.27.18 12.00 | Basis: | Wet Weight |
| Seq Number: | 3061402 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 08.27.18 19.32 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 08.27.18 19.32 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 08.27.18 19.32 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00400 | 0.00400 | mg/kg | 08.27.18 19.32 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 08.27.18 19.32 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 08.27.18 19.32 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 08.27.18 19.32 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 93 | % | 70-130 | 08.27.18 19.32 | |
| 1,4-Difluorobenzene | 540-36-3 | 94 | % | 70-130 | 08.27.18 19.32 | |

# Certificate of Analytical Results 596508

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS03** | Matrix: | Soil | Date Received: | 08.21.18 12.57 |
| Lab Sample Id: | 596508-003 | Date Collected: | 08.14.18 12.10 | Sample Depth: | 6 In |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 08.24.18 14.30 | Basis: | Wet Weight |
| Seq Number: | 3061247 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <5.00 | 5.00 | mg/kg | 08.24.18 20.25 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 08.23.18 15.00 | Basis: | Wet Weight |
| Seq Number: | 3061132 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <14.9 | 14.9 | mg/kg | 08.24.18 00.13 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <14.9 | 14.9 | mg/kg | 08.24.18 00.13 | U | 1 |
| Oil Range Hydrocarbons (ORO) | PHCG2835 | <14.9 | 14.9 | mg/kg | 08.24.18 00.13 | U | 1 |
| Total TPH | PHC635 | <14.9 | 14.9 | mg/kg | 08.24.18 00.13 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 90 | % | 70-135 | 08.24.18 00.13 | |
| o-Terphenyl | 84-15-1 | 91 | % | 70-135 | 08.24.18 00.13 | |

# Certificate of Analytical Results 596508

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS03** | Matrix: | Soil | Date Received: | 08.21.18 12.57 |
| Lab Sample Id: | 596508-003 | Date Collected: | 08.14.18 12.10 | Sample Depth: | 6 In |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | ALJ | | | % Moisture: | |
| Analyst: | ALJ | Date Prep: | 08.27.18 12.00 | Basis: | Wet Weight |
| Seq Number: | 3061402 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 08.27.18 19.52 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 08.27.18 19.52 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 08.27.18 19.52 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 08.27.18 19.52 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 08.27.18 19.52 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 08.27.18 19.52 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 08.27.18 19.52 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 92 | % | 70-130 | 08.27.18 19.52 | |
| 4-Bromofluorobenzene | 460-00-4 | 89 | % | 70-130 | 08.27.18 19.52 | |

# Certificate of Analytical Results 596508

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS04** | Matrix: | Soil | Date Received: | 08.21.18 12.57 |
| Lab Sample Id: | 596508-004 | Date Collected: | 08.14.18 14.10 | Sample Depth: | 6 In |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 08.24.18 14.30 | Basis: | Wet Weight |
| Seq Number: | 3061247 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <4.97 | 4.97 | mg/kg | 08.24.18 19.30 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 08.23.18 15.00 | Basis: | Wet Weight |
| Seq Number: | 3061132 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 08.24.18 00.32 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 15.0 | mg/kg | 08.24.18 00.32 | U | 1 |
| Oil Range Hydrocarbons (ORO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 08.24.18 00.32 | U | 1 |
| Total TPH | PHC635 | <15.0 | 15.0 | mg/kg | 08.24.18 00.32 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 96 | % | 70-135 | 08.24.18 00.32 | |
| o-Terphenyl | 84-15-1 | 96 | % | 70-135 | 08.24.18 00.32 | |

# Certificate of Analytical Results 596508

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS04** | Matrix: | Soil | Date Received: | 08.21.18 12.57 |
| Lab Sample Id: | 596508-004 | Date Collected: | 08.14.18 14.10 | Sample Depth: | 6 In |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | ALJ | | | % Moisture: | |
| Analyst: | ALJ | Date Prep: | 08.27.18 12.00 | Basis: | Wet Weight |
| Seq Number: | 3061402 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 08.27.18 20.13 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 08.27.18 20.13 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 08.27.18 20.13 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 08.27.18 20.13 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 08.27.18 20.13 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 08.27.18 20.13 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 08.27.18 20.13 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 93 | % | 70-130 | 08.27.18 20.13 | |
| 4-Bromofluorobenzene | 460-00-4 | 89 | % | 70-130 | 08.27.18 20.13 | |

# Certificate of Analytical Results 596508

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS05** | Matrix: | Soil | Date Received: | 08.21.18 12.57 |
| Lab Sample Id: | 596508-005 | Date Collected: | 08.14.18 14.40 | Sample Depth: | 6 In |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 08.24.18 14.30 | Basis: | Wet Weight |
| Seq Number: | 3061247 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <5.03 | 5.03 | mg/kg | 08.24.18 19.35 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 08.23.18 15.00 | Basis: | Wet Weight |
| Seq Number: | 3061132 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <14.9 | 14.9 | mg/kg | 08.24.18 00.52 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <14.9 | 14.9 | mg/kg | 08.24.18 00.52 | U | 1 |
| Oil Range Hydrocarbons (ORO) | PHCG2835 | <14.9 | 14.9 | mg/kg | 08.24.18 00.52 | U | 1 |
| Total TPH | PHC635 | <14.9 | 14.9 | mg/kg | 08.24.18 00.52 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 92 | % | 70-135 | 08.24.18 00.52 | |
| o-Terphenyl | 84-15-1 | 93 | % | 70-135 | 08.24.18 00.52 | |

# Certificate of Analytical Results 596508

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS05** | Matrix: | Soil | Date Received: | 08.21.18 12.57 |
| Lab Sample Id: | 596508-005 | Date Collected: | 08.14.18 14.40 | Sample Depth: | 6 In |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | ALJ | | | % Moisture: | |
| Analyst: | ALJ | Date Prep: | 08.27.18 12.00 | Basis: | Wet Weight |
| Seq Number: | 3061402 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 08.27.18 20.33 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 08.27.18 20.33 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 08.27.18 20.33 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 08.27.18 20.33 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 08.27.18 20.33 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 08.27.18 20.33 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 08.27.18 20.33 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 98 | % | 70-130 | 08.27.18 20.33 | |
| 1,4-Difluorobenzene | 540-36-3 | 82 | % | 70-130 | 08.27.18 20.33 | |

# Certificate of Analytical Results 596508

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS06** | Matrix: | Soil | Date Received: | 08.21.18 12.57 |
| Lab Sample Id: | 596508-006 | Date Collected: | 08.14.18 15.45 | Sample Depth: | 6 In |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 08.24.18 14.30 | Basis: | Wet Weight |
| Seq Number: | 3061247 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <4.95 | 4.95 | mg/kg | 08.24.18 19.41 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 08.23.18 15.00 | Basis: | Wet Weight |
| Seq Number: | 3061132 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 08.24.18 01.12 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **238** | 15.0 | mg/kg | 08.24.18 01.12 | | 1 |
| Oil Range Hydrocarbons (ORO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 08.24.18 01.12 | U | 1 |
| **Total TPH** | PHC635 | **238** | 15.0 | mg/kg | 08.24.18 01.12 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 97 | % | 70-135 | 08.24.18 01.12 | |
| o-Terphenyl | 84-15-1 | 98 | % | 70-135 | 08.24.18 01.12 | |

# Certificate of Analytical Results 596508

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS06** | Matrix: | Soil | Date Received: | 08.21.18 12.57 |
| Lab Sample Id: | 596508-006 | Date Collected: | 08.14.18 15.45 | Sample Depth: | 6 In |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | ALJ | | | % Moisture: | |
| Analyst: | ALJ | Date Prep: | 08.27.18 12.00 | Basis: | Wet Weight |
| Seq Number: | 3061402 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 08.27.18 20.53 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 08.27.18 20.53 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 08.27.18 20.53 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 08.27.18 20.53 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 08.27.18 20.53 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 08.27.18 20.53 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 08.27.18 20.53 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 98 | % | 70-130 | 08.27.18 20.53 | |
| 1,4-Difluorobenzene | 540-36-3 | 93 | % | 70-130 | 08.27.18 20.53 | |

# 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

# QC Summary 596508

## LT Environmental, Inc.

PLU 274

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3061240 Matrix: Solid Date Prep: 08.24.18
MB Sample Id: 7661143-1-BLK LCS Sample Id: 7661143-1-BKS 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** Prep Method: E300P
Seq Number: 3061247 Matrix: Solid Date Prep: 08.24.18
MB Sample Id: 7661148-1-BLK LCS Sample Id: 7661148-1-BKS LCSD Sample Id: 7661148-1-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 | 243 | 97 | 247 | 99 | 90-110 | 2 | 20 | mg/kg | 08.24.18 18:57 | |

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3061240 Matrix: Soil Date Prep: 08.24.18
Parent Sample Id: 596790-001 MS Sample Id: 596790-001 S 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** Prep Method: E300P
Seq Number: 3061240 Matrix: Soil Date Prep: 08.24.18
Parent Sample Id: 596977-003 MS Sample Id: 596977-003 S 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:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3061247 Matrix: Soil Date Prep: 08.24.18
Parent Sample Id: 596508-002 MS Sample Id: 596508-002 S MSD Sample Id: 596508-002 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | 250 | 246 | 98 | 245 | 98 | 90-110 | 0 | 20 | mg/kg | 08.24.18 19:14 | |

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

# QC Summary 596508

## LT Environmental, Inc.

PLU 274

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3061247 Matrix: Soil Date Prep: 08.24.18
Parent Sample Id: 596508-003 MS Sample Id: 596508-003 S MSD Sample Id: 596508-003 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | 250 | 244 | 98 | 244 | 98 | 90-110 | 0 | 20 | mg/kg | 08.24.18 20:30 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3061132 Matrix: Solid Date Prep: 08.23.18
MB Sample Id: 7661027-1-BLK LCS Sample Id: 7661027-1-BKS 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 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3061132 Matrix: Soil Date Prep: 08.23.18
Parent Sample Id: 596598-001 MS Sample Id: 596598-001 S 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 |

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

# QC Summary 596508

## LT Environmental, Inc.

PLU 274

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3061402 Matrix: Solid Date Prep: 08.27.18

MB Sample Id: 7661244-1-BLK LCS Sample Id: 7661244-1-BKS LCSD Sample Id: 7661244-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | 0.100 | 0.108 | 108 | 0.103 | 102 | 70-130 | 5 | 35 | mg/kg | 08.27.18 14:54 | |
| Toluene | <0.00200 | 0.100 | 0.104 | 104 | 0.104 | 103 | 70-130 | 0 | 35 | mg/kg | 08.27.18 14:54 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.115 | 115 | 0.110 | 109 | 70-130 | 4 | 35 | mg/kg | 08.27.18 14:54 | |
| m,p-Xylenes | <0.00401 | 0.200 | 0.223 | 112 | 0.211 | 104 | 70-130 | 6 | 35 | mg/kg | 08.27.18 14:54 | |
| o-Xylene | <0.00200 | 0.100 | 0.103 | 103 | 0.0973 | 96 | 70-130 | 6 | 35 | mg/kg | 08.27.18 14:54 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 93 | | 98 | | 91 | | 70-130 | % | 08.27.18 14:54 |
| 4-Bromofluorobenzene | 94 | | 94 | | 91 | | 70-130 | % | 08.27.18 14:54 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3061402 Matrix: Soil Date Prep: 08.27.18

Parent Sample Id: 596507-003 MS Sample Id: 596507-003 S MSD Sample Id: 596507-003 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | 0.0998 | 0.0749 | 75 | 0.0881 | 88 | 70-130 | 16 | 35 | mg/kg | 08.27.18 15:36 | |
| Toluene | <0.00200 | 0.0998 | 0.0548 | 55 | 0.0952 | 95 | 70-130 | 54 | 35 | mg/kg | 08.27.18 15:36 | XF |
| Ethylbenzene | <0.00200 | 0.0998 | 0.0424 | 42 | 0.0811 | 81 | 70-130 | 63 | 35 | mg/kg | 08.27.18 15:36 | XF |
| m,p-Xylenes | <0.00399 | 0.200 | 0.0800 | 40 | 0.156 | 78 | 70-130 | 64 | 35 | mg/kg | 08.27.18 15:36 | XF |
| o-Xylene | <0.00200 | 0.0998 | 0.0377 | 38 | 0.0700 | 70 | 70-130 | 60 | 35 | mg/kg | 08.27.18 15:36 | XF |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 88 | | 78 | | 70-130 | % | 08.27.18 15:36 |
| 4-Bromofluorobenzene | 94 | | 93 | | 70-130 | % | 08.27.18 15:36 |

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

# CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

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Xenco Quote #
Xenco Job # 596508

**Client / Reporting Information**

Company Name / Branch: LT Environmental, Inc. - Permian Office
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705
Email: Abaker@ltenv.com
Phone No: (432) 704-5178
Project Contact: Adrian Baker
Samplers's Name: Ben Belill

**Project Information**

Project Name/Number: PLU 274
Project Location: Carlsbad, NM
Invoice To: XTO Energy - Kyle Littrell
PO Number: 2RP-2978

**Analytical Information**

**Matrix Codes**

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

| No. | Field ID / Point of Collection | Collection: Sample Depth | Collection: Date | Collection: Time | Matrix | # of bottles | Number of preserved bottles: HCl | NaOH/Zn Acetate | HNO3 | H2SO4 | NaOH | NaHSO4 | MEOH | NONE | BTEX 8021 | TPH EPA 8015 | Chloride 300.1 | Field Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SS01 | 6" | 8/14/18 | 1146 | S | 2 | | | | | | | | X | X | X | X | |
| 2 | SS02 | | | 1205 | | | | | | | | | | X | X | X | X | |
| 3 | SS03 | | | 1210 | | | | | | | | | | X | X | X | X | |
| 4 | SS04 | | | 1410 | | | | | | | | | | X | X | X | X | |
| 5 | SS05 | | | 1440 | | | | | | | | | | X | X | X | X | |
| 6 | SS06 | | | 1545 | | | | | | | | | | X | X | X | X | |
| 7 | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | |

8/14/18 BB

**Turnaround Time ( Business days)**

- [ ] Same Day TAT
- [x] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY

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

**Data Deliverable Information**

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

**Notes:**

FED-EX / UPS: Tracking #

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

| | Relinquished by Sampler: | Date Time: | Received By: | Relinquished By: | Date Time: | Received By: |
|---|---|---|---|---|---|---|
| 1 | | 8/20/18 1200 | | 2 | 8/21/18 1257 | 2 |
| 3 | Relinquished by: | Date Time: | Received By: | Relinquished By: | Date Time: | Received By: |
| 5 | Relinquished by: | Date Time: | Received By: | Custody Seal # | Preserved where applicable | On Ice / Cooler Temp. / Thermo. Corr. Factor |
| | | | | | | 9.5 / 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 loses 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.

# XENCO Laboratories
## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 08/21/2018 12:57:00 PM

**Work Order #:** 596508

**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)? | 9.5 |
| #2 *Shipping container in good condition? | **Yes** |
| #3 *Samples received on ice? | **N/A** |
| #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
Brianna Teel

**Checklist reviewed by:** Jessica Kramer Date: 08/22/2018
Jessica Kramer

# Analytical Report 596507

## for

## LT Environmental, Inc.

**Project Manager: Adrian Baker**

**PLU 274**

**28-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)

28-AUG-18

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

Reference: XENCO Report No(s): **596507**
**PLU 274**
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) 596507. 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. 596507 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

**Jessica Kramer**
Project Assistant

# Sample Cross Reference 596507

## LT Environmental, Inc., Arvada, CO

PLU 274

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| SS07 | S | 08-15-18 10:47 | 6 In | 596507-001 |
| SS08 | S | 08-15-18 15:00 | 1 ft | 596507-002 |
| SS09 | S | 08-15-18 10:30 | 6 In | 596507-003 |

# CASE NARRATIVE

***Client Name: LT Environmental, Inc.***
***Project Name: PLU 274***

Project ID:
Work Order Number(s): *596507*

Report Date: *28-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-3061402 BTEX by EPA 8021B
Lab Sample ID 596507-003 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 596507-001, -002, -003.
The Laboratory Control Sample for Toluene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.
Samples in the analytical batch are: 596507-001, -002, -003
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

# Certificate of Analysis Summary 596507

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU 274

**Project Id:**
**Contact:** Adrian Baker
**Project Location:** Carlsbad, NM

**Date Received in Lab:** Tue Aug-21-18 12:56 pm
**Report Date:** 28-AUG-18
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 596507-001 | | 596507-002 | | 596507-003 | | | |
| | ***Field Id:*** | SS07 | | SS08 | | SS09 | | | |
| | ***Depth:*** | 6- In | | 1- ft | | 6- In | | | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | | |
| | ***Sampled:*** | Aug-15-18 10:47 | | Aug-15-18 15:00 | | Aug-15-18 10:30 | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Aug-27-18 12:00 | | Aug-27-18 12:00 | | Aug-27-18 12:00 | | | |
| | ***Analyzed:*** | Aug-27-18 18:11 | | Aug-27-18 18:31 | | Aug-27-18 18:51 | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | | |
| Benzene | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | <0.00198 | 0.00198 | | |
| Toluene | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | <0.00198 | 0.00198 | | |
| Ethylbenzene | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | <0.00198 | 0.00198 | | |
| m,p-Xylenes | | <0.00402 | 0.00402 | <0.00404 | 0.00404 | <0.00397 | 0.00397 | | |
| o-Xylene | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | <0.00198 | 0.00198 | | |
| Total Xylenes | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | <0.00198 | 0.00198 | | |
| Total BTEX | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | <0.00198 | 0.00198 | | |
| **Inorganic Anions by EPA 300** | ***Extracted:*** | Aug-22-18 16:45 | | Aug-22-18 16:45 | | Aug-22-18 16:45 | | | |
| | ***Analyzed:*** | Aug-22-18 22:52 | | Aug-22-18 22:57 | | Aug-22-18 23:03 | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | | |
| Chloride | | <5.04 | 5.04 | 19.7 | 5.03 | <4.95 | 4.95 | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | Aug-23-18 15:00 | | Aug-23-18 15:00 | | Aug-23-18 15:00 | | | |
| | ***Analyzed:*** | Aug-23-18 21:55 | | Aug-23-18 22:14 | | Aug-23-18 22:34 | | | |
| | ***Units/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 | | |
| Diesel Range Organics (DRO) | | 78.2 | 15.0 | 99.8 | 15.0 | 95.5 | 15.0 | | |
| Oil Range Hydrocarbons (ORO) | | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | | |
| Total TPH | | 78.2 | 15.0 | 99.8 | 15.0 | 95.5 | 15.0 | | |





Jessica Kramer
Project Assistant

# Certificate of Analytical Results 596507

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS07** | Matrix: | Soil | Date Received: | 08.21.18 12.56 |
| Lab Sample Id: | 596507-001 | Date Collected: | 08.15.18 10.47 | Sample Depth: | 6 In |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 08.22.18 16.45 | Basis: | Wet Weight |
| Seq Number: | 3060979 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <5.04 | 5.04 | mg/kg | 08.22.18 22.52 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 08.23.18 15.00 | Basis: | Wet Weight |
| Seq Number: | 3061132 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 08.23.18 21.55 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **78.2** | 15.0 | mg/kg | 08.23.18 21.55 | | 1 |
| Oil Range Hydrocarbons (ORO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 08.23.18 21.55 | U | 1 |
| **Total TPH** | PHC635 | **78.2** | 15.0 | mg/kg | 08.23.18 21.55 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 92 | % | 70-135 | 08.23.18 21.55 | |
| o-Terphenyl | 84-15-1 | 101 | % | 70-135 | 08.23.18 21.55 | |

# Certificate of Analytical Results 596507

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS07** | Matrix: | Soil | Date Received: | 08.21.18 12.56 |
| Lab Sample Id: | 596507-001 | Date Collected: | 08.15.18 10.47 | Sample Depth: | 6 In |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | ALJ | | | % Moisture: | |
| Analyst: | ALJ | Date Prep: | 08.27.18 12.00 | Basis: | Wet Weight |
| Seq Number: | 3061402 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 08.27.18 18.11 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 08.27.18 18.11 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 08.27.18 18.11 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 08.27.18 18.11 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 08.27.18 18.11 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 08.27.18 18.11 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 08.27.18 18.11 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 96 | % | 70-130 | 08.27.18 18.11 | |
| 1,4-Difluorobenzene | 540-36-3 | 92 | % | 70-130 | 08.27.18 18.11 | |

# Certificate of Analytical Results 596507

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS08** | Matrix: | Soil | Date Received: | 08.21.18 12.56 |
| Lab Sample Id: | 596507-002 | Date Collected: | 08.15.18 15.00 | Sample Depth: | 1 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 08.22.18 16.45 | Basis: | Wet Weight |
| Seq Number: | 3060979 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **19.7** | 5.03 | mg/kg | 08.22.18 22.57 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 08.23.18 15.00 | Basis: | Wet Weight |
| Seq Number: | 3061132 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 08.23.18 22.14 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **99.8** | 15.0 | mg/kg | 08.23.18 22.14 | | 1 |
| Oil Range Hydrocarbons (ORO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 08.23.18 22.14 | U | 1 |
| **Total TPH** | PHC635 | **99.8** | 15.0 | mg/kg | 08.23.18 22.14 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 94 | % | 70-135 | 08.23.18 22.14 | |
| o-Terphenyl | 84-15-1 | 97 | % | 70-135 | 08.23.18 22.14 | |

# Certificate of Analytical Results 596507

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS08** | Matrix: | Soil | Date Received: | 08.21.18 12.56 |
| Lab Sample Id: | 596507-002 | Date Collected: | 08.15.18 15.00 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | ALJ | | | % Moisture: | |
| Analyst: | ALJ | Date Prep: | 08.27.18 12.00 | Basis: | Wet Weight |
| Seq Number: | 3061402 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 08.27.18 18.31 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 08.27.18 18.31 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 08.27.18 18.31 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00404 | 0.00404 | mg/kg | 08.27.18 18.31 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 08.27.18 18.31 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 08.27.18 18.31 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 08.27.18 18.31 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 94 | % | 70-130 | 08.27.18 18.31 | |
| 1,4-Difluorobenzene | 540-36-3 | 91 | % | 70-130 | 08.27.18 18.31 | |

# Certificate of Analytical Results 596507

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS09** | Matrix: | Soil | Date Received: | 08.21.18 12.56 |
| Lab Sample Id: | 596507-003 | Date Collected: | 08.15.18 10.30 | Sample Depth: | 6 In |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 08.22.18 16.45 | Basis: | Wet Weight |
| Seq Number: | 3060979 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <4.95 | 4.95 | mg/kg | 08.22.18 23.03 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 08.23.18 15.00 | Basis: | Wet Weight |
| Seq Number: | 3061132 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 08.23.18 22.34 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **95.5** | 15.0 | mg/kg | 08.23.18 22.34 | | 1 |
| Oil Range Hydrocarbons (ORO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 08.23.18 22.34 | U | 1 |
| **Total TPH** | PHC635 | **95.5** | 15.0 | mg/kg | 08.23.18 22.34 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 91 | % | 70-135 | 08.23.18 22.34 | |
| o-Terphenyl | 84-15-1 | 94 | % | 70-135 | 08.23.18 22.34 | |

# Certificate of Analytical Results 596507

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS09** | Matrix: | Soil | Date Received: | 08.21.18 12.56 |
| Lab Sample Id: | 596507-003 | Date Collected: | 08.15.18 10.30 | Sample Depth: | 6 In |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | ALJ | | | % Moisture: | |
| Analyst: | ALJ | Date Prep: | 08.27.18 12.00 | Basis: | Wet Weight |
| Seq Number: | 3061402 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00198 | 0.00198 | mg/kg | 08.27.18 18.51 | U | 1 |
| Toluene | 108-88-3 | <0.00198 | 0.00198 | mg/kg | 08.27.18 18.51 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00198 | 0.00198 | mg/kg | 08.27.18 18.51 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00397 | 0.00397 | mg/kg | 08.27.18 18.51 | U | 1 |
| o-Xylene | 95-47-6 | <0.00198 | 0.00198 | mg/kg | 08.27.18 18.51 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00198 | 0.00198 | mg/kg | 08.27.18 18.51 | U | 1 |
| Total BTEX | | <0.00198 | 0.00198 | mg/kg | 08.27.18 18.51 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 90 | % | 70-130 | 08.27.18 18.51 | |
| 4-Bromofluorobenzene | 460-00-4 | 94 | % | 70-130 | 08.27.18 18.51 | |

# 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

# QC Summary 596507

## LT Environmental, Inc.

PLU 274

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3060979 Matrix: Solid Date Prep: 08.22.18
MB Sample Id: 7660911-1-BLK LCS Sample Id: 7660911-1-BKS LCSD Sample Id: 7660911-1-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 | 247 | 99 | 248 | 99 | 90-110 | 0 | 20 | mg/kg | 08.22.18 20:40 | |

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3060979 Matrix: Soil Date Prep: 08.22.18
Parent Sample Id: 596494-002 MS Sample Id: 596494-002 S MSD Sample Id: 596494-002 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 7.43 | 248 | 262 | 103 | 262 | 103 | 90-110 | 0 | 20 | mg/kg | 08.22.18 20:56 | |

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3060979 Matrix: Soil Date Prep: 08.22.18
Parent Sample Id: 596494-012 MS Sample Id: 596494-012 S MSD Sample Id: 596494-012 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 193 | 251 | 443 | 100 | 440 | 98 | 90-110 | 1 | 20 | mg/kg | 08.22.18 22:13 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3061132 Matrix: Solid Date Prep: 08.23.18
MB Sample Id: 7661027-1-BLK LCS Sample Id: 7661027-1-BKS 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 [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

# QC Summary 596507

## LT Environmental, Inc.

PLU 274

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3061132 Matrix: Soil Date Prep: 08.23.18
Parent Sample Id: 596598-001 MS Sample Id: 596598-001 S 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** Prep Method: SW5030B
Seq Number: 3061402 Matrix: Solid Date Prep: 08.27.18
MB Sample Id: 7661244-1-BLK LCS Sample Id: 7661244-1-BKS LCSD Sample Id: 7661244-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | 0.100 | 0.108 | 108 | 0.103 | 102 | 70-130 | 5 | 35 | mg/kg | 08.27.18 14:54 | |
| Toluene | <0.00200 | 0.100 | 0.104 | 104 | 0.104 | 103 | 70-130 | 0 | 35 | mg/kg | 08.27.18 14:54 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.115 | 115 | 0.110 | 109 | 70-130 | 4 | 35 | mg/kg | 08.27.18 14:54 | |
| m,p-Xylenes | <0.00401 | 0.200 | 0.223 | 112 | 0.211 | 104 | 70-130 | 6 | 35 | mg/kg | 08.27.18 14:54 | |
| o-Xylene | <0.00200 | 0.100 | 0.103 | 103 | 0.0973 | 96 | 70-130 | 6 | 35 | mg/kg | 08.27.18 14:54 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 93 | | 98 | | 91 | | 70-130 | % | 08.27.18 14:54 |
| 4-Bromofluorobenzene | 94 | | 94 | | 91 | | 70-130 | % | 08.27.18 14:54 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3061402 Matrix: Soil Date Prep: 08.27.18
Parent Sample Id: 596507-003 MS Sample Id: 596507-003 S MSD Sample Id: 596507-003 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | 0.0998 | 0.0749 | 75 | 0.0881 | 88 | 70-130 | 16 | 35 | mg/kg | 08.27.18 15:36 | |
| Toluene | <0.00200 | 0.0998 | 0.0548 | 55 | 0.0952 | 95 | 70-130 | 54 | 35 | mg/kg | 08.27.18 15:36 | XF |
| Ethylbenzene | <0.00200 | 0.0998 | 0.0424 | 42 | 0.0811 | 81 | 70-130 | 63 | 35 | mg/kg | 08.27.18 15:36 | XF |
| m,p-Xylenes | <0.00399 | 0.200 | 0.0800 | 40 | 0.156 | 78 | 70-130 | 64 | 35 | mg/kg | 08.27.18 15:36 | XF |
| o-Xylene | <0.00200 | 0.0998 | 0.0377 | 38 | 0.0700 | 70 | 70-130 | 60 | 35 | mg/kg | 08.27.18 15:36 | XF |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 88 | | 78 | | 70-130 | % | 08.27.18 15:36 |
| 4-Bromofluorobenzene | 94 | | 93 | | 70-130 | % | 08.27.18 15:36 |

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

# CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

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Xenco Quote #
Xenco Job # 596507

**Client / Reporting Information**

Company Name / Branch: LT Environmental, Inc. - Permian Office
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705
Email: Abaker@ltenv.com
Phone No: (432) 704-5178
Project Contact: Adrian Baker
Samplers's Name Joseph S. Hernandez

**Project Information**

Project Name/Number: PLU 274
Project Location: Carlsbad, NM
Invoice To: XTO Energy - Kyle Littrell
PO Number: ZRP 2978

**Analytical Information**

| No. | Field ID / Point of Collection | Collection: Sample Depth | Date | Time | Matrix | # of bottles | Preserved: HCl | NaOH/Zn Acetate | HNO3 | H2SO4 | NaOH | NaHSO4 | MEOH | NONE | BTEX EPA 8020 | TPH EPA 8015 | Chloride 300.1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SS07 | 6" | 8/15/18 | 1047 | S | 1 | | | | | | | | X | X | X | X |
| 2 | SS08 | 1' | ↓ | 1500 | ↓ | ↓ | | | | | | | | X | X | X | X |
| 3 | SS09 | 6" | ↓ | 1030 | ↓ | ↓ | | | | | | | | X | X | X | X |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | 8/15/18 | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | |

**Matrix Codes**

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

Field Comments

**Turnaround Time ( Business days)**

- [ ] Same Day TAT
- [ ] Next Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 3 Day EMERGENCY
- [X] 5 Day TAT
- [ ] 7 Day TAT
- [ ] Contract TAT

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

**Data Deliverable Information**

- [ ] Level II Std QC
- [ ] Level III Std QC+ Forms
- [ ] Level 3 (CLP Forms)
- [ ] TRRP Checklist
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] TRRP Level IV
- [ ] UST / RG -411

Notes:

FED-EX / UPS: Tracking #

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

| | Relinquished by Sampler: | Date Time: | Received By: | Relinquished By: | Date Time: | Received By: |
|---|---|---|---|---|---|---|
| 1 | | 8/20/18 800 | | | | |
| 2 | | | | | 8/21 1256 | 8/21/18 |
| 3 | Relinquished by: | Date Time: | Received By: | Relinquished By: | Date Time: | Received By: 1256 |
| 4 | | | | | | |
| 5 | Relinquished by: | Date Time: | Received By: | Custody Seal # | Preserved where applicable | On Ice: Cooler Temp. 9.5 IR 0.0 Thermo. Corr. Factor |

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 loses 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.

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 08/21/2018 12:56:00 PM

**Work Order #:** 596507

**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)? | 9.5 |
| #2 *Shipping container in good condition? | **Yes** |
| #3 *Samples received on ice? | **N/A** |
| #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

Brianna Teel

**Checklist reviewed by:** Jessica Kramer Date: 08/22/2018

Jessica Kramer

# Analytical Report 620366

## for

## LT Environmental, Inc.

**Project Manager: Adrian Baker**

**PLU 274**

**---**

**15-APR-19**

Collected By: Client

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

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)

15-APR-19

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

Reference: XENCO Report No(s): **620366**
**PLU 274**
Project Address: ---

**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) 620366. 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. 620366 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,

**Kalei Stout**
Midland Laboratory Director

# Sample Cross Reference 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| FS01 | S | 04-04-19 12:10 | 0.25 ft | 620366-001 |
| SS04A | S | 04-04-19 12:30 | 1 ft | 620366-002 |
| SS10 | S | 04-04-19 12:40 | 1 ft | 620366-003 |
| SS10A | S | 04-04-19 12:50 | 2 ft | 620366-004 |
| SS11 | S | 04-04-19 13:00 | 1 ft | 620366-005 |
| SS11A | S | 04-04-19 13:10 | 2 ft | 620366-006 |
| SS12 | S | 04-04-19 13:20 | 0.5 ft | 620366-007 |
| SS12A | S | 04-04-19 13:30 | 1 ft | 620366-008 |
| SS03A | S | 04-04-19 13:40 | 1 ft | 620366-009 |
| SS02A | S | 04-04-19 13:50 | 1 ft | 620366-010 |
| SS05A | S | 04-04-19 14:00 | 1 ft | 620366-011 |

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3085437 TPH by SW8015 Mod
Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected;
Samples affected are: 620366-001,620366-008,620366-007.

Batch: LBA-3085551 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3085721 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 620366-010 SD.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.
Samples in the analytical batch are: 620366-009, -010, -011

Lab Sample ID 620366-010 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: 620366-009, -010, -011.
The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

# Certificate of Analysis Summary 620366

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU 274

**Project Id:** ---
**Contact:** Adrian Baker
**Project Location:** ---

**Date Received in Lab:** Mon Apr-08-19 01:55 pm
**Report Date:** 15-APR-19
**Project Manager:** Kalei Stout

| *Analysis Requested* | *Lab Id:* | 620366-001 | | 620366-002 | | 620366-003 | | 620366-004 | | 620366-005 | | 620366-006 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Field Id:* | FS01 | | SS04A | | SS10 | | SS10A | | SS11 | | SS11A | |
| | *Depth:* | 0.25- ft | | 1- ft | | 1- ft | | 2- ft | | 1- ft | | 2- ft | |
| | *Matrix:* | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | *Sampled:* | Apr-04-19 12:10 | | Apr-04-19 12:30 | | Apr-04-19 12:40 | | Apr-04-19 12:50 | | Apr-04-19 13:00 | | Apr-04-19 13:10 | |
| **BTEX by EPA 8021B** | *Extracted:* | Apr-11-19 17:00 | | Apr-11-19 17:00 | | Apr-11-19 17:00 | | Apr-11-19 17:00 | | Apr-11-19 17:00 | | Apr-11-19 17:00 | |
| | *Analyzed:* | Apr-13-19 01:39 | | Apr-13-19 01:58 | | Apr-13-19 02:17 | | Apr-13-19 02:36 | | Apr-13-19 02:55 | | Apr-13-19 03:14 | |
| | *Units/RL:* | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Benzene | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00200 | 0.00200 |
| Toluene | | 0.00268 | 0.00202 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00200 | 0.00200 |
| Ethylbenzene | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00200 | 0.00200 |
| m,p-Xylenes | | <0.00403 | 0.00403 | <0.00401 | 0.00401 | <0.00398 | 0.00398 | <0.00402 | 0.00402 | <0.00398 | 0.00398 | <0.00400 | 0.00400 |
| o-Xylene | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00200 | 0.00200 |
| Total Xylenes | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00200 | 0.00200 |
| Total BTEX | | 0.00268 | 0.00202 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00200 | 0.00200 |
| **Inorganic Anions by EPA 300** | *Extracted:* | Apr-10-19 16:45 | | Apr-10-19 16:45 | | Apr-10-19 16:45 | | Apr-10-19 16:45 | | Apr-10-19 16:45 | | Apr-10-19 16:45 | |
| | *Analyzed:* | Apr-14-19 13:49 | | Apr-14-19 13:56 | | Apr-14-19 14:04 | | Apr-15-19 07:48 | | Apr-14-19 14:47 | | Apr-14-19 14:54 | |
| | *Units/RL:* | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 18.2 | 4.98 | 22.3 | 5.04 | <4.99 | 4.99 | <5.03 | 5.03 | <4.96 | 4.96 | <4.96 | 4.96 |
| **TPH by SW8015 Mod** | *Extracted:* | Apr-11-19 16:00 | | Apr-11-19 16:00 | | Apr-11-19 16:00 | | Apr-11-19 16:00 | | Apr-11-19 16:00 | | Apr-11-19 16:00 | |
| | *Analyzed:* | Apr-12-19 00:20 | | Apr-12-19 00:39 | | Apr-12-19 01:38 | | Apr-12-19 01:58 | | Apr-12-19 02:17 | | Apr-12-19 02:37 | |
| | *Units/RL:* | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | <74.9 | 74.9 | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 |
| Diesel Range Organics (DRO) | | 4300 | 74.9 | 16.0 | 15.0 | 21.9 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 |
| Motor Oil Range Hydrocarbons (MRO) | | 901 | 74.9 | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 |
| Total TPH | | 5200 | 74.9 | 16.0 | 15.0 | 21.9 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 |
| Total GRO-DRO | | 4300 | 74.9 | 16.0 | 15.0 | 21.9 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 |





Kalei Stout
Midland Laboratory Director

# Certificate of Analysis Summary 620366

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU 274

**Project Id:** ---
**Contact:** Adrian Baker
**Project Location:** ---

**Date Received in Lab:** Mon Apr-08-19 01:55 pm
**Report Date:** 15-APR-19
**Project Manager:** Kalei Stout

| *Analysis Requested* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 620366-007 | | 620366-008 | | 620366-009 | | 620366-010 | | 620366-011 | |
| | ***Field Id:*** | SS12 | | SS12A | | SS03A | | SS02A | | SS05A | |
| | ***Depth:*** | 0.5- ft | | 1- ft | | 1- ft | | 1- ft | | 1- ft | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Apr-04-19 13:20 | | Apr-04-19 13:30 | | Apr-04-19 13:40 | | Apr-04-19 13:50 | | Apr-04-19 14:00 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Apr-11-19 17:00 | | Apr-11-19 17:00 | | Apr-14-19 16:19 | | Apr-14-19 16:19 | | Apr-14-19 16:19 | |
| | ***Analyzed:*** | Apr-13-19 03:33 | | Apr-13-19 03:52 | | Apr-15-19 12:33 | | Apr-15-19 05:43 | | Apr-15-19 06:02 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Benzene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00200 | 0.00200 |
| Toluene | | <0.00200 | 0.00200 | 0.00332 | 0.00200 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00200 | 0.00200 |
| Ethylbenzene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00200 | 0.00200 |
| m,p-Xylenes | | <0.00400 | 0.00400 | <0.00399 | 0.00399 | <0.00397 | 0.00397 | <0.00401 | 0.00401 | <0.00400 | 0.00400 |
| o-Xylene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00200 | 0.00200 |
| Total Xylenes | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00200 | 0.00200 |
| Total BTEX | | <0.00200 | 0.00200 | 0.00332 | 0.00200 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00200 | 0.00200 |
| **Inorganic Anions by EPA 300** | ***Extracted:*** | Apr-10-19 16:45 | | Apr-10-19 16:45 | | Apr-10-19 16:45 | | Apr-10-19 16:45 | | Apr-10-19 16:45 | |
| | ***Analyzed:*** | Apr-14-19 15:02 | | Apr-14-19 15:09 | | Apr-14-19 15:16 | | Apr-14-19 15:23 | | Apr-14-19 15:45 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 17.7 | 4.96 | 5.07 | 4.99 | <5.04 | 5.04 | 5.70 | 4.98 | 5.48 | 5.04 |
| **TPH by SW8015 Mod** | ***Extracted:*** | Apr-11-19 16:00 | | Apr-11-19 16:00 | | Apr-11-19 16:00 | | Apr-11-19 16:00 | | Apr-11-19 16:00 | |
| | ***Analyzed:*** | Apr-12-19 02:57 | | Apr-12-19 03:16 | | Apr-12-19 03:36 | | Apr-12-19 03:56 | | Apr-12-19 04:16 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | <74.8 | 74.8 | <74.9 | 74.9 | <74.9 | 74.9 | <15.0 | 15.0 | <15.0 | 15.0 |
| Diesel Range Organics (DRO) | | 4810 | 74.8 | 5820 | 74.9 | 4840 | 74.9 | <15.0 | 15.0 | 28.3 | 15.0 |
| Motor Oil Range Hydrocarbons (MRO) | | 851 | 74.8 | 993 | 74.9 | 927 | 74.9 | <15.0 | 15.0 | <15.0 | 15.0 |
| Total TPH | | 5660 | 74.8 | 6810 | 74.9 | 5770 | 74.9 | <15.0 | 15.0 | 28.3 | 15.0 |
| Total GRO-DRO | | 4810 | 74.8 | 5820 | 74.9 | 4840 | 74.9 | <15.0 | 15.0 | 28.3 | 15.0 |





Kalei Stout
Midland Laboratory Director

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS01** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-001 | Date Collected: | 04.04.19 12.10 | Sample Depth: | 0.25 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | |
| Analyst: | SPC | Date Prep: | 04.10.19 16.45 | Basis: | Wet Weight |
| Seq Number: | 3085620 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **18.2** | 4.98 | mg/kg | 04.14.19 13.49 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.11.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3085437 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <74.9 | 74.9 | mg/kg | 04.12.19 00.20 | U | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **4300** | 74.9 | mg/kg | 04.12.19 00.20 | | 5 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **901** | 74.9 | mg/kg | 04.12.19 00.20 | | 5 |
| **Total TPH** | PHC635 | **5200** | 74.9 | mg/kg | 04.12.19 00.20 | | 5 |
| **Total GRO-DRO** | PHC628 | **4300** | 74.9 | mg/kg | 04.12.19 00.20 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 87 | % | 70-135 | 04.12.19 00.20 | |
| o-Terphenyl | 84-15-1 | 142 | % | 70-135 | 04.12.19 00.20 | ** |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS01** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-001 | Date Collected: | 04.04.19 12.10 | Sample Depth: | 0.25 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.11.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3085551 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 04.13.19 01.39 | U | 1 |
| **Toluene** | 108-88-3 | **0.00268** | 0.00202 | mg/kg | 04.13.19 01.39 | | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 04.13.19 01.39 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00403 | 0.00403 | mg/kg | 04.13.19 01.39 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 04.13.19 01.39 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 04.13.19 01.39 | U | 1 |
| **Total BTEX** | | **0.00268** | 0.00202 | mg/kg | 04.13.19 01.39 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 114 | % | 70-130 | 04.13.19 01.39 | |
| 1,4-Difluorobenzene | 540-36-3 | 106 | % | 70-130 | 04.13.19 01.39 | |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS04A** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-002 | Date Collected: | 04.04.19 12.30 | Sample Depth: | 1 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | |
| Analyst: | SPC | Date Prep: | 04.10.19 16.45 | Basis: | Wet Weight |
| Seq Number: | 3085620 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **22.3** | 5.04 | mg/kg | 04.14.19 13.56 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.11.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3085437 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.12.19 00.39 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **16.0** | 15.0 | mg/kg | 04.12.19 00.39 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 04.12.19 00.39 | U | 1 |
| **Total TPH** | PHC635 | **16.0** | 15.0 | mg/kg | 04.12.19 00.39 | | 1 |
| **Total GRO-DRO** | PHC628 | **16.0** | 15.0 | mg/kg | 04.12.19 00.39 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 94 | % | 70-135 | 04.12.19 00.39 | |
| o-Terphenyl | 84-15-1 | 92 | % | 70-135 | 04.12.19 00.39 | |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS04A** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-002 | Date Collected: | 04.04.19 12.30 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.11.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3085551 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 04.13.19 01.58 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 04.13.19 01.58 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 04.13.19 01.58 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 04.13.19 01.58 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 04.13.19 01.58 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 04.13.19 01.58 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 04.13.19 01.58 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 129 | % | 70-130 | 04.13.19 01.58 | |
| 1,4-Difluorobenzene | 540-36-3 | 100 | % | 70-130 | 04.13.19 01.58 | |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS10** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-003 | Date Collected: | 04.04.19 12.40 | Sample Depth: | 1 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | |
| Analyst: | SPC | Date Prep: | 04.10.19 16.45 | Basis: | Wet Weight |
| Seq Number: | 3085620 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <4.99 | 4.99 | mg/kg | 04.14.19 14.04 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.11.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3085437 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.12.19 01.38 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **21.9** | 15.0 | mg/kg | 04.12.19 01.38 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 04.12.19 01.38 | U | 1 |
| **Total TPH** | PHC635 | **21.9** | 15.0 | mg/kg | 04.12.19 01.38 | | 1 |
| **Total GRO-DRO** | PHC628 | **21.9** | 15.0 | mg/kg | 04.12.19 01.38 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 97 | % | 70-135 | 04.12.19 01.38 | |
| o-Terphenyl | 84-15-1 | 96 | % | 70-135 | 04.12.19 01.38 | |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS10** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-003 | Date Collected: | 04.04.19 12.40 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.11.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3085551 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 04.13.19 02.17 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 04.13.19 02.17 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 04.13.19 02.17 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 04.13.19 02.17 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 04.13.19 02.17 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 04.13.19 02.17 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 04.13.19 02.17 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 117 | % | 70-130 | 04.13.19 02.17 | |
| 1,4-Difluorobenzene | 540-36-3 | 105 | % | 70-130 | 04.13.19 02.17 | |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS10A** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-004 | Date Collected: | 04.04.19 12.50 | Sample Depth: | 2 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | |
| Analyst: | SPC | Date Prep: | 04.10.19 16.45 | Basis: | Wet Weight |
| Seq Number: | 3085620 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <5.03 | 5.03 | mg/kg | 04.15.19 07.48 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.11.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3085437 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.12.19 01.58 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 15.0 | mg/kg | 04.12.19 01.58 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 04.12.19 01.58 | U | 1 |
| Total TPH | PHC635 | <15.0 | 15.0 | mg/kg | 04.12.19 01.58 | U | 1 |
| Total GRO-DRO | PHC628 | <15.0 | 15.0 | mg/kg | 04.12.19 01.58 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 94 | % | 70-135 | 04.12.19 01.58 | |
| o-Terphenyl | 84-15-1 | 93 | % | 70-135 | 04.12.19 01.58 | |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS10A** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-004 | Date Collected: | 04.04.19 12.50 | Sample Depth: | 2 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.11.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3085551 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 04.13.19 02.36 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 04.13.19 02.36 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 04.13.19 02.36 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 04.13.19 02.36 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 04.13.19 02.36 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 04.13.19 02.36 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 04.13.19 02.36 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 04.13.19 02.36 | |
| 4-Bromofluorobenzene | 460-00-4 | 118 | % | 70-130 | 04.13.19 02.36 | |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS11** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-005 | Date Collected: | 04.04.19 13.00 | Sample Depth: | 1 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | |
| Analyst: | SPC | Date Prep: | 04.10.19 16.45 | Basis: | Wet Weight |
| Seq Number: | 3085620 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <4.96 | 4.96 | mg/kg | 04.14.19 14.47 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.11.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3085437 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.12.19 02.17 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 15.0 | mg/kg | 04.12.19 02.17 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 04.12.19 02.17 | U | 1 |
| Total TPH | PHC635 | <15.0 | 15.0 | mg/kg | 04.12.19 02.17 | U | 1 |
| Total GRO-DRO | PHC628 | <15.0 | 15.0 | mg/kg | 04.12.19 02.17 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 96 | % | 70-135 | 04.12.19 02.17 | |
| o-Terphenyl | 84-15-1 | 96 | % | 70-135 | 04.12.19 02.17 | |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS11** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-005 | Date Collected: | 04.04.19 13.00 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.11.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3085551 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 04.13.19 02.55 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 04.13.19 02.55 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 04.13.19 02.55 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 04.13.19 02.55 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 04.13.19 02.55 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 04.13.19 02.55 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 04.13.19 02.55 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 104 | % | 70-130 | 04.13.19 02.55 | |
| 4-Bromofluorobenzene | 460-00-4 | 116 | % | 70-130 | 04.13.19 02.55 | |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS11A** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-006 | Date Collected: | 04.04.19 13.10 | Sample Depth: | 2 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | |
| Analyst: | SPC | Date Prep: | 04.10.19 16.45 | Basis: | Wet Weight |
| Seq Number: | 3085620 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <4.96 | 4.96 | mg/kg | 04.14.19 14.54 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.11.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3085437 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.12.19 02.37 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 15.0 | mg/kg | 04.12.19 02.37 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 04.12.19 02.37 | U | 1 |
| Total TPH | PHC635 | <15.0 | 15.0 | mg/kg | 04.12.19 02.37 | U | 1 |
| Total GRO-DRO | PHC628 | <15.0 | 15.0 | mg/kg | 04.12.19 02.37 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 97 | % | 70-135 | 04.12.19 02.37 | |
| o-Terphenyl | 84-15-1 | 96 | % | 70-135 | 04.12.19 02.37 | |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS11A** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-006 | Date Collected: | 04.04.19 13.10 | Sample Depth: | 2 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.11.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3085551 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 04.13.19 03.14 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 04.13.19 03.14 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 04.13.19 03.14 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00400 | 0.00400 | mg/kg | 04.13.19 03.14 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 04.13.19 03.14 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 04.13.19 03.14 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 04.13.19 03.14 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 104 | % | 70-130 | 04.13.19 03.14 | |
| 4-Bromofluorobenzene | 460-00-4 | 118 | % | 70-130 | 04.13.19 03.14 | |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS12** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-007 | Date Collected: | 04.04.19 13.20 | Sample Depth: | 0.5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | |
| Analyst: | SPC | Date Prep: | 04.10.19 16.45 | Basis: | Wet Weight |
| Seq Number: | 3085620 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **17.7** | 4.96 | mg/kg | 04.14.19 15.02 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.11.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3085437 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <74.8 | 74.8 | mg/kg | 04.12.19 02.57 | U | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **4810** | 74.8 | mg/kg | 04.12.19 02.57 | | 5 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **851** | 74.8 | mg/kg | 04.12.19 02.57 | | 5 |
| **Total TPH** | PHC635 | **5660** | 74.8 | mg/kg | 04.12.19 02.57 | | 5 |
| **Total GRO-DRO** | PHC628 | **4810** | 74.8 | mg/kg | 04.12.19 02.57 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 95 | % | 70-135 | 04.12.19 02.57 | |
| o-Terphenyl | 84-15-1 | 166 | % | 70-135 | 04.12.19 02.57 | ** |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS12** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-007 | Date Collected: | 04.04.19 13.20 | Sample Depth: | 0.5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.11.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3085551 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 04.13.19 03.33 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 04.13.19 03.33 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 04.13.19 03.33 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00400 | 0.00400 | mg/kg | 04.13.19 03.33 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 04.13.19 03.33 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 04.13.19 03.33 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 04.13.19 03.33 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 105 | % | 70-130 | 04.13.19 03.33 | |
| 4-Bromofluorobenzene | 460-00-4 | 112 | % | 70-130 | 04.13.19 03.33 | |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS12A** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-008 | Date Collected: | 04.04.19 13.30 | Sample Depth: | 1 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | |
| Analyst: | SPC | Date Prep: | 04.10.19 16.45 | Basis: | Wet Weight |
| Seq Number: | 3085620 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **5.07** | 4.99 | mg/kg | 04.14.19 15.09 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.11.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3085437 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <74.9 | 74.9 | mg/kg | 04.12.19 03.16 | U | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **5820** | 74.9 | mg/kg | 04.12.19 03.16 | | 5 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **993** | 74.9 | mg/kg | 04.12.19 03.16 | | 5 |
| **Total TPH** | PHC635 | **6810** | 74.9 | mg/kg | 04.12.19 03.16 | | 5 |
| **Total GRO-DRO** | PHC628 | **5820** | 74.9 | mg/kg | 04.12.19 03.16 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 98 | % | 70-135 | 04.12.19 03.16 | |
| o-Terphenyl | 84-15-1 | 166 | % | 70-135 | 04.12.19 03.16 | ** |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS12A** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-008 | Date Collected: | 04.04.19 13.30 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.11.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3085551 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 04.13.19 03.52 | U | 1 |
| **Toluene** | 108-88-3 | **0.00332** | 0.00200 | mg/kg | 04.13.19 03.52 | | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 04.13.19 03.52 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 04.13.19 03.52 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 04.13.19 03.52 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 04.13.19 03.52 | U | 1 |
| **Total BTEX** | | **0.00332** | 0.00200 | mg/kg | 04.13.19 03.52 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 101 | % | 70-130 | 04.13.19 03.52 | |
| 4-Bromofluorobenzene | 460-00-4 | 123 | % | 70-130 | 04.13.19 03.52 | |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS03A** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-009 | Date Collected: | 04.04.19 13.40 | Sample Depth: | 1 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | |
| Analyst: | SPC | Date Prep: | 04.10.19 16.45 | Basis: | Wet Weight |
| Seq Number: | 3085620 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <5.04 | 5.04 | mg/kg | 04.14.19 15.16 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.11.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3085437 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <74.9 | 74.9 | mg/kg | 04.12.19 03.36 | U | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **4840** | 74.9 | mg/kg | 04.12.19 03.36 | | 5 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **927** | 74.9 | mg/kg | 04.12.19 03.36 | | 5 |
| **Total TPH** | PHC635 | **5770** | 74.9 | mg/kg | 04.12.19 03.36 | | 5 |
| **Total GRO-DRO** | PHC628 | **4840** | 74.9 | mg/kg | 04.12.19 03.36 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 89 | % | 70-135 | 04.12.19 03.36 | |
| o-Terphenyl | 84-15-1 | 120 | % | 70-135 | 04.12.19 03.36 | |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS03A** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-009 | Date Collected: | 04.04.19 13.40 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.14.19 16.19 | Basis: | Wet Weight |
| Seq Number: | 3085721 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00198 | 0.00198 | mg/kg | 04.15.19 12.33 | U | 1 |
| Toluene | 108-88-3 | <0.00198 | 0.00198 | mg/kg | 04.15.19 12.33 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00198 | 0.00198 | mg/kg | 04.15.19 12.33 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00397 | 0.00397 | mg/kg | 04.15.19 12.33 | U | 1 |
| o-Xylene | 95-47-6 | <0.00198 | 0.00198 | mg/kg | 04.15.19 12.33 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00198 | 0.00198 | mg/kg | 04.15.19 12.33 | U | 1 |
| Total BTEX | | <0.00198 | 0.00198 | mg/kg | 04.15.19 12.33 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 105 | % | 70-130 | 04.15.19 12.33 | |
| 4-Bromofluorobenzene | 460-00-4 | 113 | % | 70-130 | 04.15.19 12.33 | |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS02A** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-010 | Date Collected: | 04.04.19 13.50 | Sample Depth: | 1 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | |
| Analyst: | SPC | Date Prep: | 04.10.19 16.45 | Basis: | Wet Weight |
| Seq Number: | 3085620 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **5.70** | 4.98 | mg/kg | 04.14.19 15.23 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.11.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3085437 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.12.19 03.56 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 15.0 | mg/kg | 04.12.19 03.56 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 04.12.19 03.56 | U | 1 |
| Total TPH | PHC635 | <15.0 | 15.0 | mg/kg | 04.12.19 03.56 | U | 1 |
| Total GRO-DRO | PHC628 | <15.0 | 15.0 | mg/kg | 04.12.19 03.56 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 95 | % | 70-135 | 04.12.19 03.56 | |
| o-Terphenyl | 84-15-1 | 94 | % | 70-135 | 04.12.19 03.56 | |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS02A** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-010 | Date Collected: | 04.04.19 13.50 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.14.19 16.19 | Basis: | Wet Weight |
| Seq Number: | 3085721 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 04.15.19 05.43 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 04.15.19 05.43 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 04.15.19 05.43 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 04.15.19 05.43 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 04.15.19 05.43 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 04.15.19 05.43 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 04.15.19 05.43 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 04.15.19 05.43 | |
| 4-Bromofluorobenzene | 460-00-4 | 104 | % | 70-130 | 04.15.19 05.43 | |

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS05A** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-011 | Date Collected: | 04.04.19 14.00 | Sample Depth: | 1 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | |
| Analyst: | SPC | Date Prep: | 04.10.19 16.45 | Basis: | Wet Weight |
| Seq Number: | 3085620 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **5.48** | 5.04 | mg/kg | 04.14.19 15.45 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.11.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3085437 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.12.19 04.16 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **28.3** | 15.0 | mg/kg | 04.12.19 04.16 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 04.12.19 04.16 | U | 1 |
| **Total TPH** | PHC635 | **28.3** | 15.0 | mg/kg | 04.12.19 04.16 | | 1 |
| **Total GRO-DRO** | PHC628 | **28.3** | 15.0 | mg/kg | 04.12.19 04.16 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 94 | % | 70-135 | 04.12.19 04.16 | |
| o-Terphenyl | 84-15-1 | 93 | % | 70-135 | 04.12.19 04.16 | |

# Certificate of Analytical Results 620366

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS05A** | Matrix: | Soil | Date Received: | 04.08.19 13.55 |
| Lab Sample Id: | 620366-011 | Date Collected: | 04.04.19 14.00 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.14.19 16.19 | Basis: | Wet Weight |
| Seq Number: | 3085721 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 04.15.19 06.02 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 04.15.19 06.02 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 04.15.19 06.02 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00400 | 0.00400 | mg/kg | 04.15.19 06.02 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 04.15.19 06.02 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 04.15.19 06.02 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 04.15.19 06.02 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 109 | % | 70-130 | 04.15.19 06.02 | |
| 1,4-Difluorobenzene | 540-36-3 | 105 | % | 70-130 | 04.15.19 06.02 | |

# 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

# QC Summary 620366

## LT Environmental, Inc.

PLU 274

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3085620 Matrix: Solid Date Prep: 04.10.19
MB Sample Id: 7675495-1-BLK LCS Sample Id: 7675495-1-BKS LCSD Sample Id: 7675495-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.858 | 250 | 257 | 103 | 255 | 102 | 90-110 | 1 | 20 | mg/kg | 04.14.19 13:13 | |

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3085620 Matrix: Soil Date Prep: 04.10.19
Parent Sample Id: 620316-006 MS Sample Id: 620316-006 S MSD Sample Id: 620316-006 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 39.3 | 248 | 301 | 106 | 296 | 104 | 90-110 | 2 | 20 | mg/kg | 04.14.19 13:35 | |

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3085620 Matrix: Soil Date Prep: 04.10.19
Parent Sample Id: 620366-010 MS Sample Id: 620366-010 S MSD Sample Id: 620366-010 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 5.70 | 249 | 264 | 104 | 255 | 100 | 90-110 | 3 | 20 | mg/kg | 04.14.19 15:31 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3085437 Matrix: Solid Date Prep: 04.11.19
MB Sample Id: 7675578-1-BLK LCS Sample Id: 7675578-1-BKS LCSD Sample Id: 7675578-1-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 | 1060 | 106 | 1000 | 100 | 70-135 | 6 | 20 | mg/kg | 04.11.19 20:31 | |
| Diesel Range Organics (DRO) | <8.13 | 1000 | 1180 | 118 | 1120 | 112 | 70-135 | 5 | 20 | mg/kg | 04.11.19 20:31 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 109 | | 128 | | 129 | | 70-135 | % | 04.11.19 20:31 |
| o-Terphenyl | 111 | | 128 | | 123 | | 70-135 | % | 04.11.19 20:31 |

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

# QC Summary 620366

## LT Environmental, Inc.

PLU 274

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3085437 Matrix: Soil Date Prep: 04.11.19
Parent Sample Id: 620611-001 MS Sample Id: 620611-001 S MSD Sample Id: 620611-001 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 | 907 | 91 | 919 | 92 | 70-135 | 1 | 20 | mg/kg | 04.11.19 21:28 | |
| Diesel Range Organics (DRO) | <8.11 | 998 | 986 | 99 | 1010 | 101 | 70-135 | 2 | 20 | mg/kg | 04.11.19 21:28 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 124 | | 124 | | 70-135 | % | 04.11.19 21:28 |
| o-Terphenyl | 121 | | 118 | | 70-135 | % | 04.11.19 21:28 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3085551 Matrix: Solid Date Prep: 04.11.19
MB Sample Id: 7675680-1-BLK LCS Sample Id: 7675680-1-BKS LCSD Sample Id: 7675680-1-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 | 0.0924 | 93 | 0.0938 | 95 | 70-130 | 2 | 35 | mg/kg | 04.12.19 18:44 | |
| Toluene | <0.00200 | 0.0998 | 0.0895 | 90 | 0.0915 | 92 | 70-130 | 2 | 35 | mg/kg | 04.12.19 18:44 | |
| Ethylbenzene | <0.000564 | 0.0998 | 0.0957 | 96 | 0.0962 | 97 | 70-130 | 1 | 35 | mg/kg | 04.12.19 18:44 | |
| m,p-Xylenes | <0.00101 | 0.200 | 0.211 | 106 | 0.203 | 103 | 70-130 | 4 | 35 | mg/kg | 04.12.19 18:44 | |
| o-Xylene | <0.000344 | 0.0998 | 0.107 | 107 | 0.103 | 104 | 70-130 | 4 | 35 | mg/kg | 04.12.19 18:44 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 104 | | 99 | | 99 | | 70-130 | % | 04.12.19 18:44 |
| 4-Bromofluorobenzene | 111 | | 105 | | 105 | | 70-130 | % | 04.12.19 18:44 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3085721 Matrix: Solid Date Prep: 04.14.19
MB Sample Id: 7675776-1-BLK LCS Sample Id: 7675776-1-BKS LCSD Sample Id: 7675776-1-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 | 0.0945 | 95 | 0.0923 | 92 | 70-130 | 2 | 35 | mg/kg | 04.15.19 03:51 | |
| Toluene | <0.00200 | 0.0998 | 0.0908 | 91 | 0.0898 | 90 | 70-130 | 1 | 35 | mg/kg | 04.15.19 03:51 | |
| Ethylbenzene | <0.00200 | 0.0998 | 0.0937 | 94 | 0.0933 | 93 | 70-130 | 0 | 35 | mg/kg | 04.15.19 03:51 | |
| m,p-Xylenes | <0.00399 | 0.200 | 0.185 | 93 | 0.184 | 92 | 70-130 | 1 | 35 | mg/kg | 04.15.19 03:51 | |
| o-Xylene | <0.00200 | 0.0998 | 0.0951 | 95 | 0.0946 | 95 | 70-130 | 1 | 35 | mg/kg | 04.15.19 03:51 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 106 | | 100 | | 98 | | 70-130 | % | 04.15.19 03:51 |
| 4-Bromofluorobenzene | 101 | | 102 | | 102 | | 70-130 | % | 04.15.19 03:51 |

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

# QC Summary 620366

## LT Environmental, Inc.

PLU 274

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3085551 Matrix: Soil Date Prep: 04.11.19

Parent Sample Id: 620188-045 MS Sample Id: 620188-045 S MSD Sample Id: 620188-045 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 | 0.0842 | 84 | 0.0891 | 88 | 70-130 | 6 | 35 | mg/kg | 04.12.19 19:22 | |
| Toluene | <0.000457 | 0.100 | 0.0823 | 82 | 0.0878 | 87 | 70-130 | 6 | 35 | mg/kg | 04.12.19 19:22 | |
| Ethylbenzene | 0.000792 | 0.100 | 0.0857 | 85 | 0.0912 | 90 | 70-130 | 6 | 35 | mg/kg | 04.12.19 19:22 | |
| m,p-Xylenes | 0.00438 | 0.201 | 0.178 | 86 | 0.187 | 90 | 70-130 | 5 | 35 | mg/kg | 04.12.19 19:22 | |
| o-Xylene | 0.00201 | 0.100 | 0.0904 | 88 | 0.0949 | 92 | 70-130 | 5 | 35 | mg/kg | 04.12.19 19:22 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 100 | | 99 | | 70-130 | % | 04.12.19 19:22 |
| 4-Bromofluorobenzene | 110 | | 110 | | 70-130 | % | 04.12.19 19:22 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3085721 Matrix: Soil Date Prep: 04.14.19

Parent Sample Id: 620366-010 MS Sample Id: 620366-010 S MSD Sample Id: 620366-010 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000386 | 0.100 | 0.0806 | 81 | 0.0292 | 29 | 70-130 | 94 | 35 | mg/kg | 04.15.19 04:29 | XF |
| Toluene | <0.000457 | 0.100 | 0.0774 | 77 | 0.0422 | 42 | 70-130 | 59 | 35 | mg/kg | 04.15.19 04:29 | XF |
| Ethylbenzene | <0.000567 | 0.100 | 0.0767 | 77 | 0.0487 | 48 | 70-130 | 45 | 35 | mg/kg | 04.15.19 04:29 | XF |
| m,p-Xylenes | 0.00120 | 0.201 | 0.153 | 76 | 0.0932 | 46 | 70-130 | 49 | 35 | mg/kg | 04.15.19 04:29 | XF |
| o-Xylene | 0.000651 | 0.100 | 0.0787 | 78 | 0.0497 | 49 | 70-130 | 45 | 35 | mg/kg | 04.15.19 04:29 | XF |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 99 | | 91 | | 70-130 | % | 04.15.19 04:29 |
| 4-Bromofluorobenzene | 108 | | 148 | ** | 70-130 | % | 04.15.19 04:29 |

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

# Chain of Custody

Work Order No: 620364

XENCO LABORATORIES

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)

www.xenco.com Page 1 of 2

| | | | |
|---|---|---|---|
| Project Manager: | Adrian Baker | Bill to: (if different) | Kyle Littrell |
| Company Name: | LT Environmental, Inc., Permian office | Company Name: | XTO Energy |
| Address: | 3300 North A Street | Address: | |
| City, State ZIP: | Midland, TX 79705 | City, State ZIP: | |
| Phone: | 432.704.5178 Email: | | abaker@ltenv.com |

**Work Order Comments**

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

| | | | |
|---|---|---|---|
| Project Name: | PLU 274 | Turn Around | |
| Project Number: | | Routine | ☑ |
| P.O. Number: | | Rush: | |
| Sampler's Name: | L. Lambach | Due Date: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes (No) | Wet Ice: | (Yes) No |
| Temperature (°C): | 0.5\|0.4 | Thermometer ID | |
| Received Intact: | (Yes) No | | |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0 |
| Sample Custody Seals: | Yes No (N/A) | Total Containers: | |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| FS01 | S | 04/04/19 | 12:10 | 0.25' | 1 | X | X | X |
| SS04A | S | | 12:30 | 1' | | | | |
| SS10 | S | | 12:40 | 1' | | | | |
| SS10A | S | | 12:50 | 2' | | | | |
| SS11 | S | | 13:00 | 1' | | | | |
| SS11A | S | | 13:10 | 2' | | | | |
| SS12 | S | | 13:20 | 0.5' | | | | |
| SS12A | S | | 13:30 | 1' | | | | |
| SS03A | S | | 13:40 | 1' | | | | |
| SS-2A | S | | 13:50 | 1' | | | | |

**ANALYSIS REQUEST**

**Work Order Notes**

TAT starts the day recevied by the lab, if received by 4:30pm

**Sample Comments**

**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 Tl 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 Tl U **1631 / 245.1 / 7470 / 7471** : Hg

**Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses 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 |
|---|---|---|---|---|---|
| 1 | | 04/08/2019 8:30 | 2 | | 4/8/19 1155 |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date 051418 Rev. 2018.1

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# Chain of Custody

Work Order No: 1020364

XENCO LABORATORIES

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)

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| | | | |
|---|---|---|---|
| Project Manager: | Adrian Baker | Bill to: (if different) | Kyle Littrell XTO Energy |
| Company Name: | LT Environmental, Inc., Permian office | Company Name: | |
| Address: | 3300 North A Street | Address: | |
| City, State ZIP: | Midland, TX 79705 | City, State ZIP: | |
| Phone: | 432.704.5178 Email: | | abaker@ltenv.com |

**Work Order Comments**

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

| | | | |
|---|---|---|---|
| Project Name: | PLU 274 | Turn Around | |
| Project Number: | 0129/8060 | Routine | ☒ |
| P.O. Number: | | Rush: | |
| Sampler's Name: | L. Lambach | Due Date: | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | Yes (No) | Wet Ice: | (Yes) No | |
| Temperature (°C): | 05/04 | Thermometer ID | | |
| Received Intact: | (Yes) No | | | |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.1 | |
| Sample Custody Seals: | Yes No (N/A) | Total Containers: | | |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| SS05A | S | 04/04/19 | 14:00 | 1' | 1 | X | X | X |

ANALYSIS REQUEST

**Work Order Notes**

TAT starts the day recevied by the lab, if received by 4:30pm

**Sample Comments**

**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 Tl 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 Tl U **1631 / 245.1 / 7470 / 7471** : Hg



| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| 1 | | 04/08/2019 8:30 | 2 | | 4/8/19 |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date 051418 Rev. 2018.1

Final 1.000

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# XENCO Laboratories
## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 04/08/2019 01:55:00 PM

**Work Order #:** 620366

**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)? | .4 |
| #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: 04/08/2019

Brianna Teel

**Checklist reviewed by:** Kalei Stout Date: 04/08/2019

Kalei Stout

# Analytical Report 622952

## for

## LT Environmental, Inc.

**Project Manager: Ashley Ager**

**PLU 274**

**03-MAY-19**

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
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-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

03-MAY-19

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

Reference: XENCO Report No(s): **622952**
**PLU 274**
Project Address: Delaware Basin

**Ashley Ager**:

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) 622952. 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. 622952 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

**Jessica Kramer**
Project Assistant

# Sample Cross Reference 622952

## LT Environmental, Inc., Arvada, CO

PLU 274

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| FS02 | S | 04-30-19 11:15 | 4 ft | 622952-001 |
| SW01 | S | 04-30-19 11:20 | 0 - 4 ft | 622952-002 |
| SW02 | S | 04-30-19 11:25 | 0 - 4 ft | 622952-003 |
| SS12B | S | 04-30-19 09:40 | 2.5 ft | 622952-004 |

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3087777 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

# Certificate of Analysis Summary 622952

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU 274

**Project Id:**
**Contact:** Ashley Ager
**Project Location:** Delaware Basin

**Date Received in Lab:** Thu May-02-19 11:05 am
**Report Date:** 03-MAY-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 622952-001 | | 622952-002 | | 622952-003 | | 622952-004 | | | | | |
| | ***Field Id:*** | FS02 | | SW01 | | SW02 | | SS12B | | | | | |
| | ***Depth:*** | 4- ft | | 0-4 ft | | 0-4 ft | | 2.5- ft | | | | | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | | | | |
| | ***Sampled:*** | Apr-30-19 11:15 | | Apr-30-19 11:20 | | Apr-30-19 11:25 | | Apr-30-19 09:40 | | | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | May-02-19 12:30 | | May-02-19 12:30 | | May-02-19 12:30 | | May-02-19 12:30 | | | | | |
| | ***Analyzed:*** | May-02-19 15:00 | | May-02-19 15:20 | | May-02-19 15:40 | | May-02-19 16:00 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | | |
| Benzene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00200 | 0.00200 | | | | |
| Toluene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00200 | 0.00200 | | | | |
| Ethylbenzene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00200 | 0.00200 | | | | |
| m,p-Xylenes | | <0.00399 | 0.00399 | <0.00400 | 0.00400 | <0.00398 | 0.00398 | <0.00400 | 0.00400 | | | | |
| o-Xylene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00200 | 0.00200 | | | | |
| Total Xylenes | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00200 | 0.00200 | | | | |
| Total BTEX | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00200 | 0.00200 | | | | |
| **Chloride by EPA 300** | ***Extracted:*** | May-02-19 14:45 | | May-02-19 14:45 | | May-02-19 14:45 | | May-02-19 14:45 | | | | | |
| | ***Analyzed:*** | May-02-19 15:10 | | May-02-19 15:28 | | May-02-19 15:34 | | May-02-19 15:40 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | | |
| Chloride | | 233 | 50.4 | 7.00 | 5.04 | 84.6 | 5.01 | 5.61 | 5.00 | | | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | May-02-19 12:00 | | May-02-19 12:00 | | May-02-19 12:00 | | May-02-19 12:00 | | | | | |
| | ***Analyzed:*** | May-02-19 14:08 | | May-03-19 07:41 | | May-02-19 15:28 | | May-02-19 15:48 | | | | | |
| | ***Units/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 | | | | |
| Diesel Range Organics (DRO) | | 18.2 | 15.0 | <15.0 | 15.0 | 624 | 15.0 | 17.8 | 15.0 | | | | |
| Motor Oil Range Hydrocarbons (MRO) | | <15.0 | 15.0 | <15.0 | 15.0 | 151 | 15.0 | <15.0 | 15.0 | | | | |
| Total TPH | | 18.2 | 15.0 | <15.0 | 15.0 | 775 | 15.0 | 17.8 | 15.0 | | | | |
| Total GRO-DRO | | 18.2 | 15.0 | <15.0 | 15.0 | 624 | 15.0 | 17.8 | 15.0 | | | | |

# Certificate of Analytical Results 622952

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS02** | Matrix: | Soil | Date Received: | 05.02.19 11.05 |
| Lab Sample Id: | 622952-001 | Date Collected: | 04.30.19 11.15 | Sample Depth: | 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | 0 |
| Analyst: | SPC | Date Prep: | 05.02.19 14.45 | Basis: | Dry Weight |
| Seq Number: | 3087814 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **233** | 50.4 | mg/kg | 05.02.19 15.10 | | 10 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 05.02.19 12.00 | Basis: | Wet Weight |
| Seq Number: | 3087797 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 05.02.19 14.08 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **18.2** | 15.0 | mg/kg | 05.02.19 14.08 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 05.02.19 14.08 | U | 1 |
| **Total TPH** | PHC635 | **18.2** | 15.0 | mg/kg | 05.02.19 14.08 | | 1 |
| **Total GRO-DRO** | PHC628 | **18.2** | 15.0 | mg/kg | 05.02.19 14.08 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 99 | % | 70-135 | 05.02.19 14.08 | |
| o-Terphenyl | 84-15-1 | 100 | % | 70-135 | 05.02.19 14.08 | |

# Certificate of Analytical Results 622952

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS02** | Matrix: | Soil | Date Received: | 05.02.19 11.05 |
| Lab Sample Id: | 622952-001 | Date Collected: | 04.30.19 11.15 | Sample Depth: | 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 05.02.19 12.30 | Basis: | Wet Weight |
| Seq Number: | 3087777 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 05.02.19 15.00 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 05.02.19 15.00 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 05.02.19 15.00 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 05.02.19 15.00 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 05.02.19 15.00 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 05.02.19 15.00 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 05.02.19 15.00 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 99 | % | 70-130 | 05.02.19 15.00 | |
| 4-Bromofluorobenzene | 460-00-4 | 99 | % | 70-130 | 05.02.19 15.00 | |

# Certificate of Analytical Results 622952

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW01** | Matrix: | Soil | Date Received: | 05.02.19 11.05 |
| Lab Sample Id: | 622952-002 | Date Collected: | 04.30.19 11.20 | Sample Depth: | 0 - 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | 0 |
| Analyst: | SPC | Date Prep: | 05.02.19 14.45 | Basis: | Dry Weight |
| Seq Number: | 3087814 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **7.00** | 5.04 | mg/kg | 05.02.19 15.28 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 05.02.19 12.00 | Basis: | Wet Weight |
| Seq Number: | 3087797 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 05.03.19 07.41 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 15.0 | mg/kg | 05.03.19 07.41 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 05.03.19 07.41 | U | 1 |
| Total TPH | PHC635 | <15.0 | 15.0 | mg/kg | 05.03.19 07.41 | U | 1 |
| Total GRO-DRO | PHC628 | <15.0 | 15.0 | mg/kg | 05.03.19 07.41 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 102 | % | 70-135 | 05.03.19 07.41 | |
| o-Terphenyl | 84-15-1 | 101 | % | 70-135 | 05.03.19 07.41 | |

# Certificate of Analytical Results 622952

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW01** | Matrix: | Soil | Date Received: | 05.02.19 11.05 |
| Lab Sample Id: | 622952-002 | Date Collected: | 04.30.19 11.20 | Sample Depth: | 0 - 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 05.02.19 12.30 | Basis: | Wet Weight |
| Seq Number: | 3087777 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 05.02.19 15.20 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 05.02.19 15.20 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 05.02.19 15.20 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00400 | 0.00400 | mg/kg | 05.02.19 15.20 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 05.02.19 15.20 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 05.02.19 15.20 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 05.02.19 15.20 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 92 | % | 70-130 | 05.02.19 15.20 | |
| 1,4-Difluorobenzene | 540-36-3 | 99 | % | 70-130 | 05.02.19 15.20 | |

# Certificate of Analytical Results 622952

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW02** | Matrix: | Soil | Date Received: | 05.02.19 11.05 |
| Lab Sample Id: | 622952-003 | Date Collected: | 04.30.19 11.25 | Sample Depth: | 0 - 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | 0 |
| Analyst: | SPC | Date Prep: | 05.02.19 14.45 | Basis: | Dry Weight |
| Seq Number: | 3087814 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **84.6** | 5.01 | mg/kg | 05.02.19 15.34 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 05.02.19 12.00 | Basis: | Wet Weight |
| Seq Number: | 3087797 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 05.02.19 15.28 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **624** | 15.0 | mg/kg | 05.02.19 15.28 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **151** | 15.0 | mg/kg | 05.02.19 15.28 | | 1 |
| **Total TPH** | PHC635 | **775** | 15.0 | mg/kg | 05.02.19 15.28 | | 1 |
| **Total GRO-DRO** | PHC628 | **624** | 15.0 | mg/kg | 05.02.19 15.28 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 99 | % | 70-135 | 05.02.19 15.28 | |
| o-Terphenyl | 84-15-1 | 103 | % | 70-135 | 05.02.19 15.28 | |

# Certificate of Analytical Results 622952

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW02** | Matrix: | Soil | Date Received: | 05.02.19 11.05 |
| Lab Sample Id: | 622952-003 | Date Collected: | 04.30.19 11.25 | Sample Depth: | 0 - 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 05.02.19 12.30 | Basis: | Wet Weight |
| Seq Number: | 3087777 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 05.02.19 15.40 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 05.02.19 15.40 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 05.02.19 15.40 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 05.02.19 15.40 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 05.02.19 15.40 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 05.02.19 15.40 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 05.02.19 15.40 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 98 | % | 70-130 | 05.02.19 15.40 | |
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 05.02.19 15.40 | |

# Certificate of Analytical Results 622952

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS12B** | Matrix: | Soil | Date Received: | 05.02.19 11.05 |
| Lab Sample Id: | 622952-004 | Date Collected: | 04.30.19 09.40 | Sample Depth: | 2.5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | 0 |
| Analyst: | SPC | Date Prep: | 05.02.19 14.45 | Basis: | Dry Weight |
| Seq Number: | 3087814 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **5.61** | 5.00 | mg/kg | 05.02.19 15.40 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 05.02.19 12.00 | Basis: | Wet Weight |
| Seq Number: | 3087797 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 05.02.19 15.48 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **17.8** | 15.0 | mg/kg | 05.02.19 15.48 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 05.02.19 15.48 | U | 1 |
| **Total TPH** | PHC635 | **17.8** | 15.0 | mg/kg | 05.02.19 15.48 | | 1 |
| **Total GRO-DRO** | PHC628 | **17.8** | 15.0 | mg/kg | 05.02.19 15.48 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 100 | % | 70-135 | 05.02.19 15.48 | |
| o-Terphenyl | 84-15-1 | 101 | % | 70-135 | 05.02.19 15.48 | |

# Certificate of Analytical Results 622952

## LT Environmental, Inc., Arvada, CO

PLU 274

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS12B** | Matrix: | Soil | Date Received: | 05.02.19 11.05 |
| Lab Sample Id: | 622952-004 | Date Collected: | 04.30.19 09.40 | Sample Depth: | 2.5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 05.02.19 12.30 | Basis: | Wet Weight |
| Seq Number: | 3087777 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 05.02.19 16.00 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 05.02.19 16.00 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 05.02.19 16.00 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00400 | 0.00400 | mg/kg | 05.02.19 16.00 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 05.02.19 16.00 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 05.02.19 16.00 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 05.02.19 16.00 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 100 | % | 70-130 | 05.02.19 16.00 | |
| 1,4-Difluorobenzene | 540-36-3 | 101 | % | 70-130 | 05.02.19 16.00 | |

# 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

# QC Summary 622952

## LT Environmental, Inc.

PLU 274

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3087814 Matrix: Solid Date Prep: 05.02.19
MB Sample Id: 7677036-1-BLK LCS Sample Id: 7677036-1-BKS LCSD Sample Id: 7677036-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.858 | 250 | 241 | 96 | 242 | 97 | 90-110 | 0 | 20 | mg/kg | 05.02.19 11:12 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3087814 Matrix: Soil Date Prep: 05.02.19
Parent Sample Id: 622952-001 MS Sample Id: 622952-001 S MSD Sample Id: 622952-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 233 | 252 | 504 | 108 | 508 | 109 | 90-110 | 1 | 20 | mg/kg | 05.02.19 15:16 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3087814 Matrix: Soil Date Prep: 05.02.19
Parent Sample Id: 622954-004 MS Sample Id: 622954-004 S MSD Sample Id: 622954-004 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 1830 | 250 | 1980 | 60 | 1990 | 64 | 90-110 | 1 | 20 | mg/kg | 05.02.19 16:33 | X |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3087797 Matrix: Solid Date Prep: 05.02.19
MB Sample Id: 7677065-1-BLK LCS Sample Id: 7677065-1-BKS LCSD Sample Id: 7677065-1-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 | 977 | 98 | 997 | 100 | 70-135 | 2 | 20 | mg/kg | 05.02.19 13:27 | |
| Diesel Range Organics (DRO) | <8.13 | 1000 | 989 | 99 | 1020 | 102 | 70-135 | 3 | 20 | mg/kg | 05.02.19 13:27 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 101 | | 125 | | 130 | | 70-135 | % | 05.02.19 13:27 |
| o-Terphenyl | 103 | | 108 | | 106 | | 70-135 | % | 05.02.19 13:27 |

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

# QC Summary 622952

## LT Environmental, Inc.

PLU 274

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3087797 Matrix: Soil Date Prep: 05.02.19
Parent Sample Id: 622952-001 MS Sample Id: 622952-001 S MSD Sample Id: 622952-001 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 | 999 | 984 | 98 | 1010 | 101 | 70-135 | 3 | 20 | mg/kg | 05.02.19 14:28 | |
| Diesel Range Organics (DRO) | 18.2 | 999 | 1010 | 99 | 1040 | 102 | 70-135 | 3 | 20 | mg/kg | 05.02.19 14:28 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 123 | | 125 | | 70-135 | % | 05.02.19 14:28 |
| o-Terphenyl | 104 | | 101 | | 70-135 | % | 05.02.19 14:28 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3087777 Matrix: Solid Date Prep: 05.02.19
MB Sample Id: 7677037-1-BLK LCS Sample Id: 7677037-1-BKS LCSD Sample Id: 7677037-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000383 | 0.0996 | 0.109 | 109 | 0.112 | 112 | 70-130 | 3 | 35 | mg/kg | 05.02.19 13:01 | |
| Toluene | <0.000454 | 0.0996 | 0.102 | 102 | 0.106 | 106 | 70-130 | 4 | 35 | mg/kg | 05.02.19 13:01 | |
| Ethylbenzene | <0.000563 | 0.0996 | 0.109 | 109 | 0.114 | 114 | 70-130 | 4 | 35 | mg/kg | 05.02.19 13:01 | |
| m,p-Xylenes | <0.00101 | 0.199 | 0.232 | 117 | 0.241 | 121 | 70-130 | 4 | 35 | mg/kg | 05.02.19 13:01 | |
| o-Xylene | <0.000343 | 0.0996 | 0.114 | 114 | 0.119 | 119 | 70-130 | 4 | 35 | mg/kg | 05.02.19 13:01 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 91 | | 102 | | 102 | | 70-130 | % | 05.02.19 13:01 |
| 4-Bromofluorobenzene | 85 | | 98 | | 101 | | 70-130 | % | 05.02.19 13:01 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3087777 Matrix: Soil Date Prep: 05.02.19
Parent Sample Id: 622952-001 MS Sample Id: 622952-001 S MSD Sample Id: 622952-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000386 | 0.100 | 0.0907 | 91 | 0.0897 | 89 | 70-130 | 1 | 35 | mg/kg | 05.02.19 13:40 | |
| Toluene | 0.000479 | 0.100 | 0.0834 | 83 | 0.0815 | 80 | 70-130 | 2 | 35 | mg/kg | 05.02.19 13:40 | |
| Ethylbenzene | <0.000567 | 0.100 | 0.0865 | 87 | 0.0822 | 81 | 70-130 | 5 | 35 | mg/kg | 05.02.19 13:40 | |
| m,p-Xylenes | <0.00102 | 0.201 | 0.182 | 91 | 0.172 | 85 | 70-130 | 6 | 35 | mg/kg | 05.02.19 13:40 | |
| o-Xylene | <0.000346 | 0.100 | 0.0894 | 89 | 0.0846 | 84 | 70-130 | 6 | 35 | mg/kg | 05.02.19 13:40 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 102 | | 103 | | 70-130 | % | 05.02.19 13:40 |
| 4-Bromofluorobenzene | 100 | | 104 | | 70-130 | % | 05.02.19 13:40 |

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

# Chain of Custody

Work Order No: 622952

XENCO LABORATORIES

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)

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Ashley Ager | Bill to: (if different) | Kyle Littrel |
| Company Name: | LT Environmental, Inc., Permian office | Company Name: | XTO-Energy |
| Address: | 3300 North A Street | Address: | |
| City, State ZIP: | Midland, TX 79705 | City, State ZIP: | Carlsbad, NM |
| Phone: | 432.704.5178 | Email: | aager@ltenv.com rmcafee@ltenv.com |

**Work Order Comments**

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

| | | | |
|---|---|---|---|
| Project Name: | PLU 274 | Turn Around | |
| Project Number: | | Routine ☐ | |
| P.O. Number: | 2RP-2978 | Rush: 24hr | |
| Sampler's Name: | Robert McAfee | Due Date: 05/02/19 | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | Yes (No) | Wet Ice: | (Yes) No | |
| Temperature (°C): | 0.4/0.3 | Thermometer ID: | D8 | |
| Received Intact: | (Yes) No | | | |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.1 | |
| Sample Custody Seals: | Yes No (N/A) | Total Containers: | | |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) | Work Order Notes / Sample Comments |
|---|---|---|---|---|---|---|---|---|---|
| FS02 | S | 04/30/19 | 1115 | 4' | 1 | X | X | X | Composite |
| SW01 | ↓ | ↓ | 1120 | 0-4' | ↓ | X | X | X | ↓ |
| SW02 | | | 1125 | 0-4' | | X | X | X | |
| SS12B | | | 0940 | 2.5' | | X | X | X | discrete |

TAT starts the day recevied by the lab, if received by 4:30pm

**ANALYSIS REQUEST**

**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 Tl 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 Tl U **1631 / 245.1 / 7470 / 7471** : Hg



| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|
| 1 | Robert McAfee | Alan S. | 04.30.19 16:23 | | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

5/2/19 1105

Revised Date 051418 Rev. 2018.1

Final 1.001

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**After printing this label**:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
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.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.

# XENCO Laboratories
## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 05/02/2019 11:05:00 AM

**Work Order #:** 622952

**Acceptable Temperature Range: 0 - 6 degC**
**Air and Metal samples Acceptable Range: Ambient**

**Temperature Measuring device used : R8**

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | .3 |
| #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: 05/02/2019
Brianna Teel

**Checklist reviewed by:** Jessica Kramer Date: 05/02/2019
Jessica Kramer

**LT Environmental, Inc.**
508 West Stevens Street
Carlsbad, New Mexico 88220
*Compliance · Engineering · Remediation*

| Identifier: | Date: |
|---|---|
| SS-2 | 09/04/2019 |
| **Project Name:** | **RP Number:** |
| PLU 274 | 2RP 2978 |
| **Lat/Long:** | **Logged By:** L. Lambuth / **Method:** hand Auger |
| **Field Screening:** PID chlorides | **Hole Diameter:** 2.5" / **Total Depth:** 1' |
| **Comments:** | |

## LITHOLOGIC / SOIL SAMPLING LOG

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Depth (ft. bgs.) | Sample Depth | Soil/Rock Type | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| D | 492 | 21.4 | N | SS02A | 0–1' | | | caliche, moder, dry, <50% fines, chipped rocky |
| | | | | | 2–12 | | | ~6" – Pad Fill; 1' – in-situ caliche; deepest depth |

**LT Environmental, Inc.**
508 West Stevens Street
Carlsbad, New Mexico 88220
*Compliance · Engineering · Remediation*

| Identifier: | Date: |
|---|---|
| SS03 | 04/04/2019 |
| **Project Name:** | **RP Number:** |
| PLU 274 | 2RP-2978 |
| **Logged By:** L. Laumbach | **Method:** hand Auger |
| **Hole Diameter:** 2.5" | **Total Depth:** 1' |

**LITHOLOGIC / SOIL SAMPLING LOG**

Lat/Long:

Field Screening: PID chlorides

Comments:

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Depth (ft. bgs.) | Sample Depth | Soil/Rock Type | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| D | CR2 | 270.2 | N | SS03A | 0 | | | |
| | | | | | 1' | | caliche | odor, → TPH?, rocky - hard to auger - through deepest depth |
| | | | | | 2 | | | |
| | | | | | 3 | | | |
| | | | | | 4 | | | |
| | | | | | 5 | | | |
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| | | | | | 9 | | | |
| | | | | | 10 | | | |
| | | | | | 11 | | | |
| | | | | | 12 | | | |

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| Identifier: | Date: |
|---|---|
| SS04 | 04/04/2019 |
| **Project Name:** | **RP Number:** |
| PLU 274 | 2RP-2978 |

**LITHOLOGIC / SOIL SAMPLING LOG**

| Logged By: | Method: |
|---|---|
| L. Lawrence | hand Auger |
| **Lat/Long:** | **Field Screening:** PID, chloride |
| **Hole Diameter:** 2.5" | **Total Depth:** 1' |

Comments:

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Depth (ft. bgs.) | Sample Depth | Soil/Rock Type | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| D | CHR | 9.2 | N | SS04A | 0 | | | caliche, rocky, No odor |
| | | | | | 1' | | | refusal |
| | | | | | 2 | | | |
| | | | | | 3 | | | |
| | | | | | 4 | | | |
| | | | | | 5 | | | |
| | | | | | 6 | | | |
| | | | | | 7 | | | |
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| | | | | | 9 | | | |
| | | | | | 10 | | | |
| | | | | | 11 | | | |
| | | | | | 12 | | | |

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| | | | |
|---|---|---|---|
| Identifier: SS05 | Date: 04/04/2017 | | |
| Project Name: PLU 274 | RP Number: 2RP 2978 | | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: L. Lawrence | Method: hand auger | |
| Lat/Long: | Field Screening: PID, chlorides | Hole Diameter: 2.5" | Total Depth: 1' |

Comments:

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Depth (ft. bgs.) | Sample Depth | Soil/Rock Type | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| D | <192 | 12.9 | N | SS05A | 0–1 | | | caliche 2" diameter rocks N odor/N stain |
| | | | | | 2–12 | | | deepest depth |

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| Identifier: | Date: |
|---|---|
| SS10 | 04/04/2019 |
| **Project Name:** | **RP Number:** |
| PLU 274 | 2RP-2978 |
| **Logged By:** L. Lambuth | **Method:** hand Auger |
| **Hole Diameter:** 2.5" | **Total Depth:** 2' |

## LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: PID chambles

Comments:

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Depth (ft. bgs.) | Sample Depth | Soil/Rock Type | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| D | <192 | 27.3 | N | | 0 | | caliche | caliche, rocky, hard to auger through |
| D | <192 | 10.6 | N | | 1 | | | No odor |
| | | | | | 2 | | | refusal |
| | | | | | 3 | | | |
| | | | | | 4 | | | |
| | | | | | 5 | | | |
| | | | | | 6 | | | |
| | | | | | 7 | | | |
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| | | | | | 9 | | | |
| | | | | | 10 | | | |
| | | | | | 11 | | | |
| | | | | | 12 | | | |

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| Identifier: | Date: |
|---|---|
| SS11 | 04/04/2019 |
| **Project Name:** | **RP Number:** |
| PLU 274 | 2RP 2978 |
| **Logged By:** L. Lambuth | **Method:** hand Auger |
| **Lat/Long:** | **Field Screening:** PID, chlorides |
| **Hole Diameter:** 2.5" | **Total Depth:** 2' |

**LITHOLOGIC / SOIL SAMPLING LOG**

Comments:

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Depth (ft. bgs.) | Sample Depth | Soil/Rock Type | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| D | <192 | 18.4 | | SS11 | 0 – 1' | | | caliche, rocky, rocks getting stuck in auger / Nodes |
| D | <192 | 110.2 | | SS11A | 1' – 2' | | | 2-3" oblong rocks |
| | | | | | 2' – 12' | | | refusal |

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| Identifier: | Date: |
|---|---|
| SS12 | 04/04/2019 |
| **Project Name:** | **RP Number:** |
| PLU 274 | 2RP 2928 |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: L. Lambert / Method: hand Auger |
| Lat/Long: | Field Screening: PID, chlorides / Hole Diameter: 2.5" / Total Depth: |

Comments:

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Depth (ft. bgs.) | Sample Depth | Soil/Rock Type | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| D | <192 | 98.2 | | SS12 | 0.5' | | | caliche - right off pad, tan, N odor |
| D | <192 | 192.4 | | SS12A | 1 | | SM | topsoil, odor, brown, sandy loam light, fines |
| | | | | | 2 | | | deepest depth |
| | | | | | 3 | | | |
| | | | | | 4 | | | |
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| | | | | | 12 | | | |

**View facing west of the excavation in the pasture area south of the well pad.**

| | | |
|---|---|---|
| Project: 012918060 | XTO Energy, Inc.<br>Poker Lake Unit 274 Tank Battery | LTE<br>Advancing Opportunity |
| April 30, 2019 | Photographic Log | |

**View facing north of the excavation within the process equipment containment.**

| | | |
|---|---|---|
| Project: 012918060 | XTO Energy, Inc.<br>Poker Lake Unit 274 Tank Battery | Advancing Opportunity |
| February 8, 2019 | Photographic Log | |

**View facing south of the excavation within the process equipment containment.**

| | | |
|---|---|---|
| Project: 012918060 | XTO Energy, Inc.<br>Poker Lake Unit 274 Tank Battery | LTE<br>Advancing Opportunity |
| April 30, 2019 | Photographic<br>Log | |