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

February 19, 2020

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

**RE: Closure Request**
**WPX Energy Permian, Inc.**
**Ross Draw Unit #057 (2RP-5716)**
**Incident ID NRM1933642770**
**Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of WPX Energy Permian, Inc. (WPX), presents the following Closure Request detailing soil sampling and excavation activities at the Ross Draw Unit (RDU) #057 (Site) in Unit K, Section 27, Township 26 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impacts to soil following an event that resulted in the release of produced water and crude oil to the pad surface and pasture west of the Site. Based on the excavation activities and results of the soil sampling events, WPX is submitting this Closure Request.

## BACKGROUND

On September 19, 2019, a failed flowline resulted in the release of 10 barrels (bbls) of produced water and 5 bbls of crude oil to the pad surface and adjacent pasture. Vacuum trucks were dispatched and recovered approximately 7 bbls of produced water and 3 bbls of crude oil. The spill volume was calculated by averaging the saturated soil depth and estimating the percentage of liquids based on soil type. Any free liquids were added to the total volume. The average saturation depth of the soil was observed to be 0.5 feet to 1 foot within the release extent and 10 bbls of production fluids were recovered. The soil type was determined to be sand, which was estimated to have an available space (i.e. porosity) of 40 percent (%) total volume. Based on these assumptions, the following equation was used to calculate total volume:

"saturated soil volume (cubic feet) x (4.21 cubic feet per bbl of liquid) x estimated soil porosity (%)"

WPX reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) which was received by the NMOCD on September 20, 2019 and was assigned Remediation Permit Number 2RP-5716 and Incident ID NRM1933642770 (Attachment 1).

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on known aquifer properties and the elevation difference between the Site and an identified water well. The nearest permitted water well with depth to water data is United States Geological Survey (USGS) water well 320125103514701, located approximately 2,974 feet northeast of the Site. Water well 320125103514701 has a reported depth to water of 110 feet bgs and is approximately 27 feet lower in elevation than the Site. The closest significant watercourse to the Site is an unnamed stream located approximately 720 feet south of the Site. The Site is greater than 300 feet from any occupied residence, school, hospital, institution, church, or wetland and greater than 1,000 feet to a freshwater well or spring. The Site is not within a 100-year floodplain or overlying a subsurface mine and is overlying an unstable area. The Site is located in a high-potential karst area.

However, on January 30, 2019, LTE contracted Southwest Geophysical Consulting, LLC (SGC) to determining the location, description, photos, and boundaries of any karst-related features within a 200-meter boundary surrounding the Site. The survey concluded that no surface karst features were located within the survey area and that the Site is located in a medium-potential karst area. The survey was conducting after the below-detailed excavation and soil sampling activities that removed approximately 730 cubic yards of impacted soil from the release area. The Cave and Karst Resource Inventory Report is included as Attachment 2.

Based on the findings of the karst survey, the following NMOCD Table 1 closure criteria apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 2,500 mg/kg total petroleum hydrocarbons (TPH); 1,000 mg/kg TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO); and 20,000 mg/kg chloride. Additionally, LTE applied a reclamation standard for chloride of 600 mg/kg for the top 4 feet of all impacted areas in the pasture.

## PRELIMINARY SOIL SAMPLING

On November 15, 2019, LTE personnel inspected the Site to evaluate the release extent. The release extent was mapped using a handheld Global Positioning System (GPS) unit and is shown on Figure 2. LTE field screened soil within the release area for volatile aromatic hydrocarbons using a photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. Field screening results indicted impacts to the soil that warranted remediation.

## DELINEATION SOIL SAMPLING

On December 3, 2019, LTE personnel returned to the Site to further assess the vertical impacts within the release extent. Using a hand auger, LTE personnel advanced nine boreholes (BH01 through BH09) to depths ranging from 3 feet to 15 feet bgs. Field screening was conducted within

each borehole for volatile aromatic hydrocarbons using a PID and chloride using Hach® chloride QuanTab® test strips. Two soil samples were collected from each borehole: the most impacted sample based on field screening results and the terminus of the pothole, with the exception of BH01, BH05, and BH08 where three soil samples were collected. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil sample was shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX following United States Environmental Protection Agency (USEPA) Method 8021B; TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-motor oil range organics (MRO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0. Based on visible surface staining and laboratory analytical results for delineation soil samples, excavation of impacted soil was warranted. Photographic documentation was conducted during the site visit. Photographs are included in Attachment 3. Soil Sampling Lithologic Logs are included in Attachment 4.

## EXCAVATION SOIL SAMPLING

From December 17, 2019, through February 14, 2020, LTE was onsite to oversee excavation activities within the release area. Excavation activities were directed by field screening soil samples for volatile aromatic hydrocarbons using a PID and chloride using Hach® chloride QuanTab® test strips. Following completion of excavation activities, 5-point composite confirmation soil samples were collected from the floor (samples labeled as "FS") and sidewalls (samples labeled as "SW") of the excavation area. Each soil sample represented at most 200 square feet. Approximately 730 cubic yards of impacted soil were removed from the excavation area and transported to the R360 Red Bluff Facility in Orla, Texas for disposal. The excavation area measured a total of approximately 865 square feet in area and ranged in depth from 22 feet to 25.5 feet bgs. Soil confirmation samples were collected, handled, and analyzed as previously described. The excavation area and soil sample locations are depicted on Figure 3. Photographic documentation was conducted during the site visit. Photographs are included in Attachment 2.

## ANALYTICAL RESULTS

Laboratory analytical results of all final excavation confirmation soil samples indicate compliance with the Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 5.

## CONCLUSIONS

A total of approximately 730 cubic yards of impacted soil were excavated from the Site. Following excavation and sampling activities, SGC's karst survey determined the Site to be in a medium potential karst area. Laboratory analytical results of final excavation confirmation soil samples indicate compliance with Closure Criteria. WPX is requesting closure of 2RP-5716 and Incident ID

NRM1933642770. Upon approval of this closure request, WPX will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. An updated NMOCD Form C-141 is included as Attachment 1.

If you have any questions or comments, please do not hesitate to contact Mr. Chris McKisson at (970) 285-9985 or abyers@ltenv.com.

Sincerely,

LT ENVIRONMENTAL, INC.

Chris McKisson
Project Environmental Scientist

Ashley L. Ager, M.S., P.G.
Senior Geologist

cc: Jim Raley, WPX

Robert Hamlet, NMOCD
Victoria Venegas, NMOCD
Jim Amos, BLM

Attachments:

| | |
|---|---|
| Figure 1 | Site Location Map |
| Figure 2 | Delineation Map |
| Figure 3 | Excavation Soil Sample Locations |
| Table 1 | Soil Analytical Results |
| Attachment 1 | Form C-141 |
| Attachment 2 | Cave and Karst Resource Inventory Report |
| Attachment 3 | Photographic Log |
| Attachment 4 | Soil Sampling Lithologic Logs |
| Attachment 5 | Laboratory Analytical Reports |

FIGURES

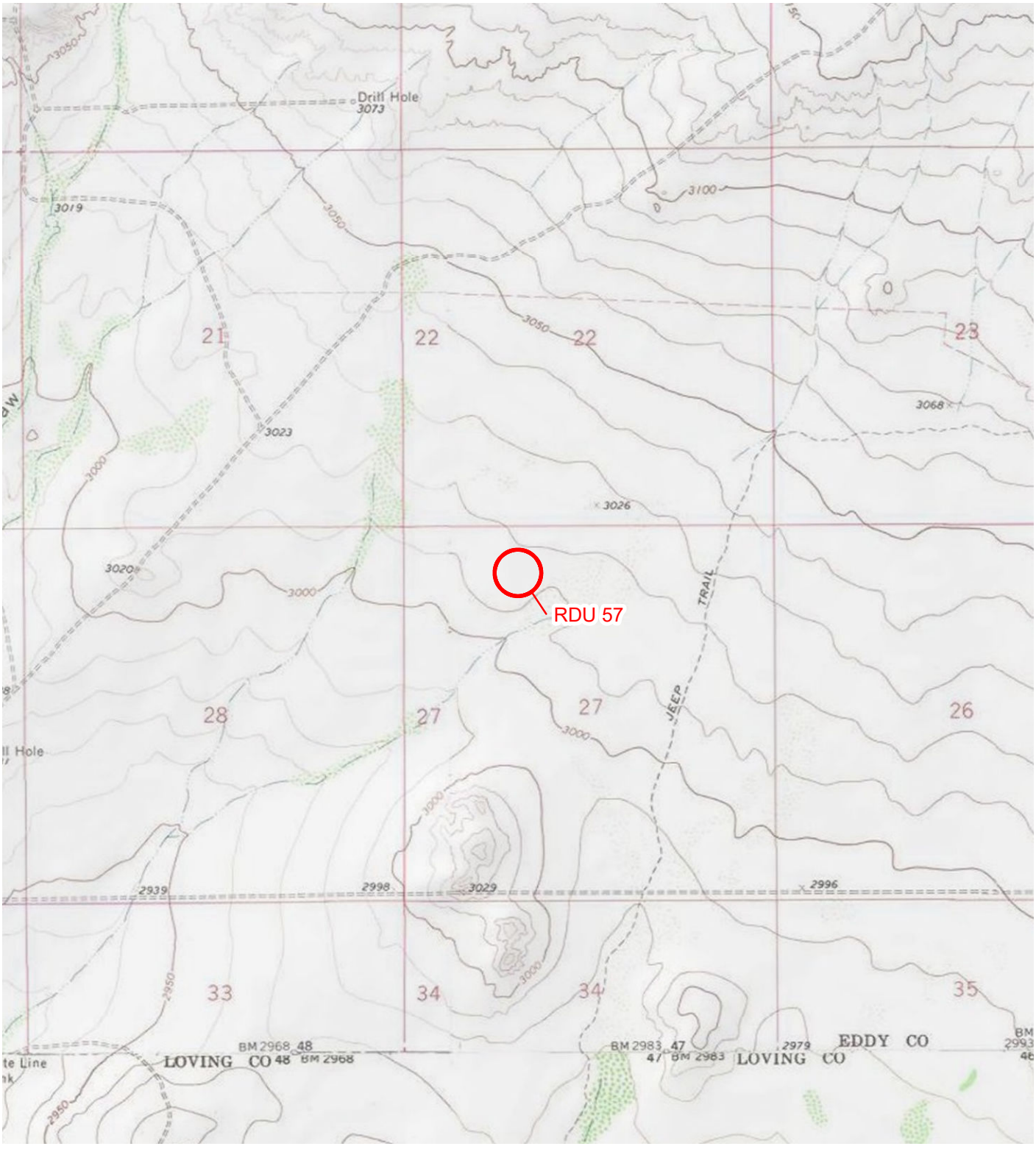



IMAGE COURTESY OF ESRI/USGS

**LEGEND**

SITE LOCATION

0 2,000 4,000

Feet

N


FIGURE 1
SITE LOCATION MAP
RDU 57
UNIT C SEC 27 T26S R30E
EDDY COUNTY, NEW MEXICO
**WPX ENERGY PERMIAN, LLC.**

P:\WPX\GIS\MXD\034819059_RDU 57@RDU 54\034819059_FIG01_SL_2019.mxd

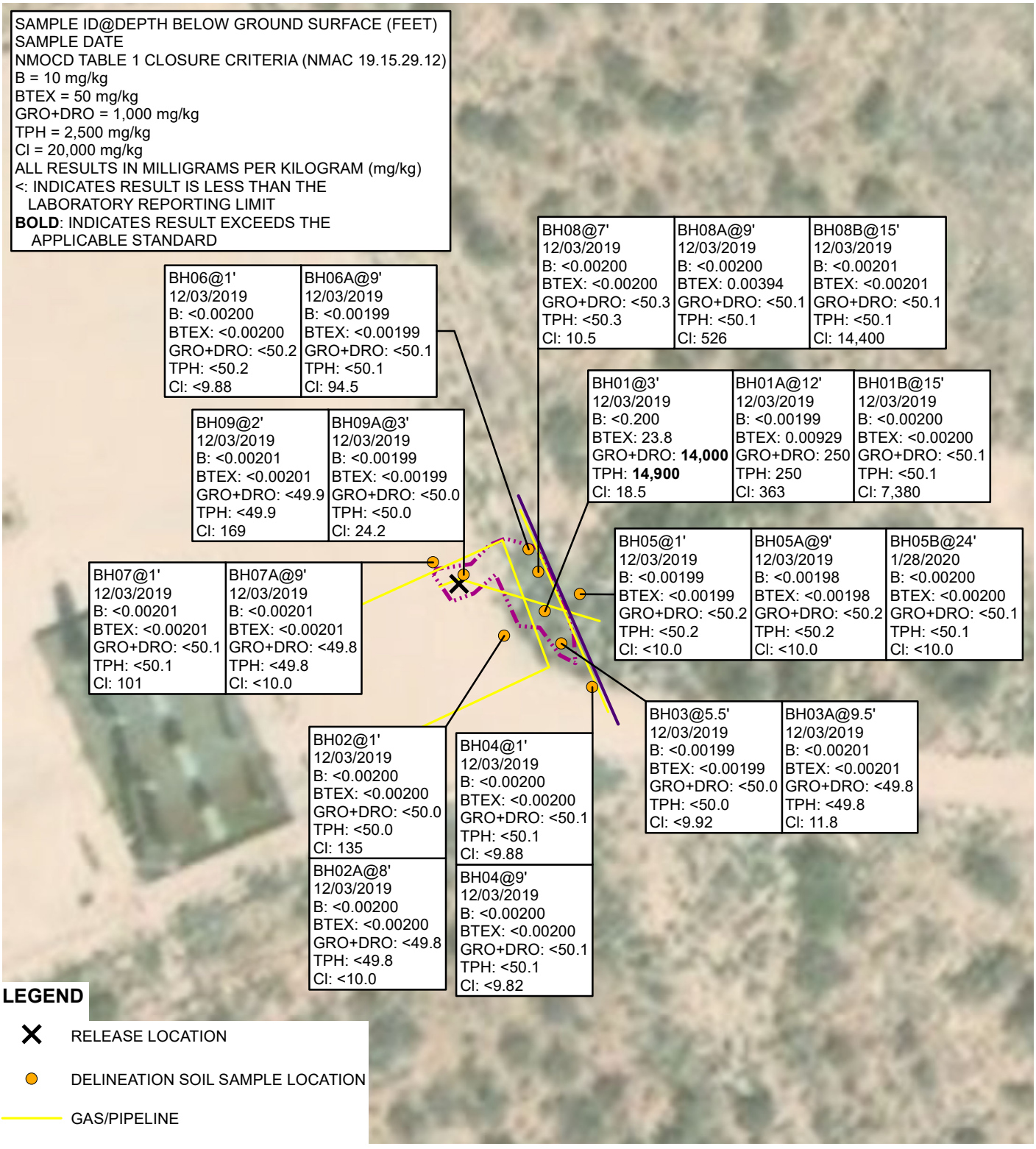
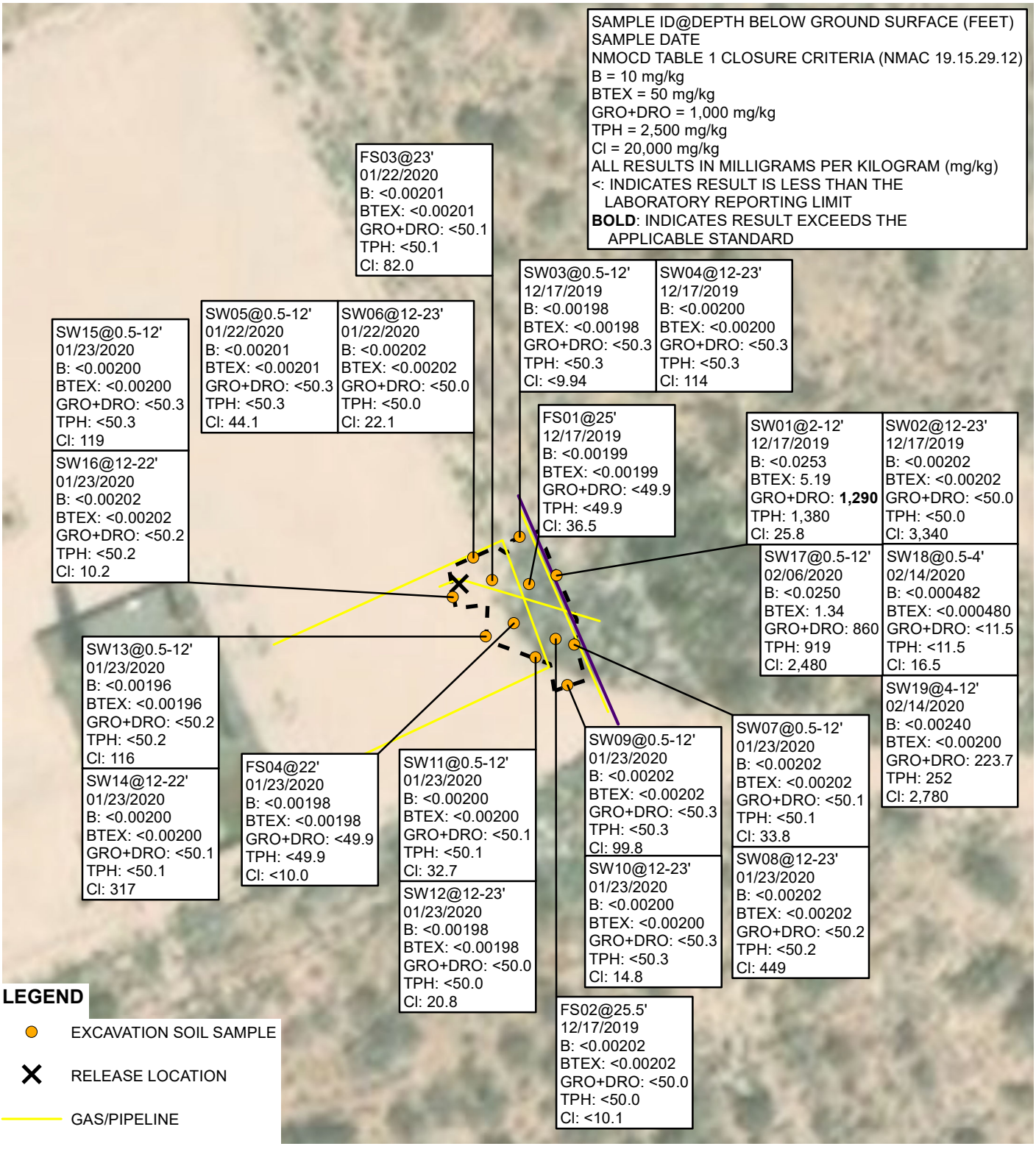



FIGURE 2
DELINEATION SOIL SAMPLE LOCATIONS
RDU 57
UNIT C SEC 27 T26S R30E
EDDY COUNTY, NEW MEXICO
**WPX ENERGY PERMIAN, LLC.**

P:\WPX\GIS\MXD\034819059_RDU 57@RDU 54\034819059_FIG02_DELINEATION_2019.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
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NOTE: 32.0188286, -103.8723347 (RDU 54 PAD)

FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
RDU 57
UNIT C SEC 27 T26S R30E
EDDY COUNTY, NEW MEXICO
**WPX ENERGY PERMIAN, LLC.**

P:\WPX\GIS\MXD\034819059_RDU 57@RDU 54\034819059_FIG03_EXCAVATION_2019.mxd

TABLE

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

**ROSS DRAW UNIT #057**
**EDDY COUNTY, NEW MEXICO**
**WPX ENERGY PERMIAN, 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) | MRO (mg/kg) | Total GRO-DRO (mg/kg) | TPH (mg/kg) | Chloride (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BH01 | 3 | 12/03/2019 | <0.200 | 0.829 | 8.99 | 14.0 | 23.8 | 2,350 | 11,600 | 967 | **14,000** | **14,900** | 18.5 |
| BH01A | 12 | 12/03/2019 | <0.00199 | <0.00199 | 0.00404 | 0.00525 | 0.00929 | <50.0 | 250 | <50.0 | 250 | 250 | 363 |
| BH01B | 15 | 12/03/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | 7,380 |
| BH02 | 1 | 12/03/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 135 |
| BH02A | 8 | 12/03/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <49.8 | <49.8 | <49.8 | <49.8 | <49.8 | <10.0 |
| BH03 | 5.5 | 12/03/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | <9.92 |
| BH03A | 9.5 | 12/03/2019 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <49.8 | <49.8 | <49.8 | <49.8 | <49.8 | 11.8 |
| BH04 | 1 | 12/03/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | <9.88 |
| BH04A | 9 | 12/03/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | <9.82 |
| BH05 | 1 | 12/03/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <50.2 | <50.2 | <50.2 | <50.2 | <50.2 | <10.0 |
| BH05A | 9 | 12/03/2019 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <50.2 | <50.2 | <50.2 | <50.2 | <50.2 | <10.0 |
| BH05 B | 24 | 01/28/2020 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | <10.0 |
| BH06 | 1 | 12/03/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.2 | <50.2 | <50.2 | <50.2 | <50.2 | <9.88 |
| BH06A | 9 | 12/03/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | 94.5 |
| BH07 | 1 | 12/03/2019 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | 101 |
| BH07A | 9 | 12/03/2019 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <49.8 | <49.8 | <49.8 | <49.8 | <49.8 | <10.0 |
| BH08 | 7 | 12/03/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.3 | <50.3 | <50.3 | <50.3 | <50.3 | 10.5 |
| BH08A | 9 | 12/03/2019 | <0.00200 | <0.00200 | <0.00200 | 0.00394 | 0.00394 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | 526 |
| BH08B | 15 | 12/03/2019 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | 14,400 |
| BH09 | 2 | 12/03/2019 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 169 |
| BH09A | 3 | 12/03/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 24.2 |
| FS01 | 25 | 12/17/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 36.5 |
| FS02 | 25.5 | 12/17/2019 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | <10.1 |
| FS03 | 23 | 01/22/2020 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | 82.0 |
| FS04 | 22 | 01/23/2020 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | <10.0 |
| SW01 | 2 - 12 | 12/17/2019 | <0.0253 | 0.355 | 0.939 | 3.90 | 5.19 | 294 | 999 | 83.5 | **1,290** | 1,380 | 25.8 |
| SW02 | 12 - 23 | 12/17/2019 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 3,340 |
| SW03 | 0.5 - 12 | 12/17/2019 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <50.3 | <50.3 | <50.3 | <50.3 | <50.3 | <9.94 |
| SW04 | 12 - 23 | 12/17/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.3 | <50.3 | <50.3 | <50.3 | <50.3 | 114 |
| SW05 | 0.5 - 12 | 01/22/2020 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <50.3 | <50.3 | <50.3 | <50.3 | <50.3 | 44.1 |
| SW06 | 12 - 23 | 01/22/2020 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 22.1 |
| SW07 | 0.5 - 12 | 01/23/2020 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | 33.8 |
| SW08 | 12 - 23 | 01/23/2020 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <50.2 | <50.2 | <50.2 | <50.2 | <50.2 | 449 |
| SW09 | 0.5 - 12 | 01/23/2020 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <50.3 | <50.3 | <50.3 | <50.3 | <50.3 | 99.8 |
| SW10 | 12 - 23 | 01/23/2020 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.3 | <50.3 | <50.3 | <50.3 | <50.3 | 14.8 |
| SW11 | 0.5 - 12 | 01/23/2020 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | 32.7 |
| SW12 | 12 - 23 | 01/23/2020 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 20.8 |
| SW13 | 0.5 - 12 | 01/23/2020 | <0.00196 | <0.00196 | <0.00196 | <0.00196 | <0.00196 | <50.2 | <50.2 | <50.2 | <50.2 | <50.2 | 116 |
| SW14 | 12 - 22 | 01/23/2020 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | 317 |
| SW15 | 0.5 - 12 | 01/23/2020 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.3 | <50.3 | <50.3 | <50.3 | <50.3 | 119 |
| SW16 | 12 - 22 | 01/23/2020 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <50.2 | <50.2 | <50.2 | <50.2 | <50.2 | 10.2 |
| SW17 | 0.5 - 12 | 02/06/2020 | <0.0250 | 0.0945 | 0.288 | 0.962 | 1.34 | 163 | 697 | 58.5 | 860 | 919 | 2,480 |
| SW18 | 0.5 - 4 | 2/14/2020 | <0.000482 | <0.000524 | <0.000403 | <0.000400 | <0.000400 | <13.9 | <11.5 | <11.5 | <11.5 | <11.5 | 16.5 |
| SW19 | 4 - 12 | 2/14/2020 | <0.00240 | <0.00261 | <0.00201 | <0.00200 | <0.00200 | 18.7 | 205 | 28.2 | 223.7 | 252 | 2,780 |
| **NMOCD Table 1 Closure Criteria** | | | **10** | NE | NE | NE | **50** | NE | NE | NE | **1,000** | **2,500** | **20,000** |

**Notes:**

bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, and total xylenes
mg/kg - milligrams per kilogram
NE - not established
NMOCD - New Mexico Oil Conservation Division
DRO - diesel range organics
GRO - gasoline range organics
MRO - motor oil range organics
TPH - total petroleum hydrocarbons
< - indicates result is below laboratory reporting limits
Bold- indicates result exceeds the applicable regulatory standard

ATTACHMENT 1: FORM C-141

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 | NRM1933642770 |
| District RP | 2RP-5716 |
| Facility ID | |
| Application ID | pRM1933641709 |

UL9LV-190920-C-1410

# Release Notification

## Responsible Party

| | |
|---|---|
| Responsible Party: WPX Energy Permian, LLC. | OGRID: 246289 |
| Contact Name: Jim Raley | Contact Telephone: 575-689-7597 |
| Contact email: james.raley@wpxenergy.com | Incident # *(assigned by OCD)* |
| Contact mailing address: 5315 Buena Vista Dr., Carlsbad, NM 88220 | |

## Location of Release Source

Latitude 32.01058 Longitude -103.87236
*(NAD 83 in decimal degrees to 5 decimal places)*

| | |
|---|---|
| Site Name: ROSS DRAW UNIT #057 | Site Type: Production Facility |
| Date Release Discovered: 9/19/2019 | API# *(if applicable): 30-015-41978* |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| K | 27 | 26S | 30E | Eddy |

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private

## 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) 5 | Volume Recovered (bbls) 3 |
| ☒ Produced Water | Volume Released (bbls) 10 | Volume Recovered (bbls) 7 |
| | 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: Failure of flowline resulted in approx. 15 bbls of fluids being released off pad edge, 10 bbls was recovered, flowline to be repaired, impacted soils to be removed. Release along flowline at (32.01878,-103.872265 WGS84)

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NRM1933642770 |
| District RP | 2RP-5716 |
| Facility ID | |
| Application ID | pRM1933641709 |

| | |
|---|---|
| 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? |
| 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: Jim Raley
Title: Environmental Specialist

Signature: Jim Raley
Date: 9/19/2019

email: james.raley@wpxenergy.com
Telephone: 575-689-7597

**OCD Only**

Received by: Ramona Marcus
Date: 12/02/2019

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NRM1933642770 |
| District RP | **2RP-5716** |
| Facility ID | |
| Application ID | pRM1933641709 |

# Site Assessment/Characterization

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

| | |
|---|---|
| What is the shallowest depth to groundwater beneath the area affected by the release? | **>100** (ft bgs) |
| Did this release impact groundwater or surface water? | ☐ 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 | NRM1933642770 |
| District RP | **2RP-5716** |
| Facility ID | |
| Application ID | pRM1933641709 |

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: **Jim Raley** Title: **Environmental Specialist**

Signature: _____ Date: **02/19/2020**

email: **James.Raley@wpxenergy.com** Telephone: **575-689-7597**

**OCD Only**

Received by: _____ Date: _____

Form C-141
Page 5

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NRM1933642770 |
| District RP | **2RP-5716** |
| Facility ID | |
| Application ID | pRM1933641709 |

# Closure

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

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

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

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

Printed Name: **Jim Raley** Title: **Environmental Specialist**

Signature: _____ Date: **02/19/2020**

email: **James.Raley@wpxenergy.com** Telephone: **575-689-7597**

**OCD Only**

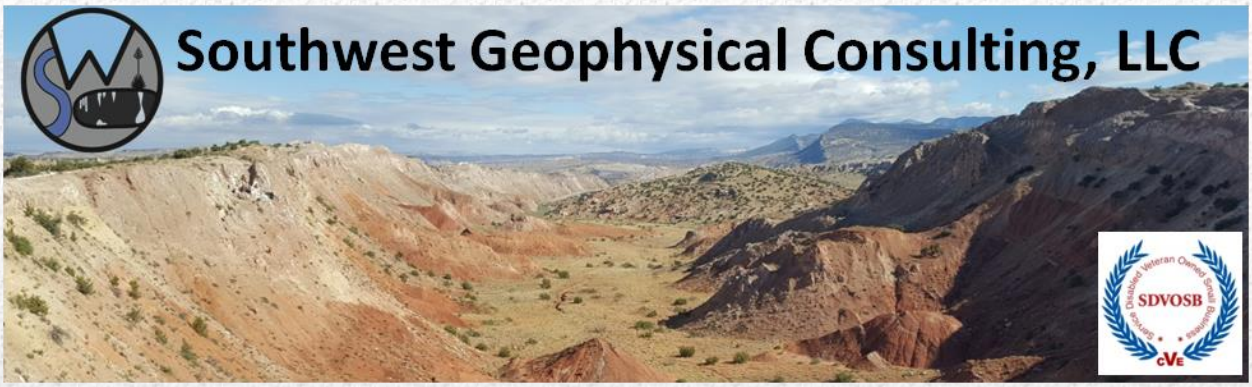
Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

ATTACHMENT 2: CAVE AND KARST RESOURCE INVENTORY REPORT




# Cave and Karst Resource Inventory Report
# Ross Draw Unit 57 Central Tank Battery
# Eddy County, New Mexico

**Prepared for:**

**LT Environmental, Inc.**

**848 East 2nd Avenue**

**Durango, CO 81301**

☐ **Positive for Karst Features – HKOZ remediation process required**

☑ **Negative for Karst Features – MKOZ remediation process may be approved by the Oil Conservation Division**

**February 10, 2020**

LTE-005-20200130

**Published by:**

Southwest Geophysical Consulting, LLC
5117 Fairfax Dr. NW
Albuquerque, NM 87114
(505) 585-2550
www.swgeophys.com

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dave@swgeophys.com

**Prepared for:**

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820 Megan Avenue, Unit B
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**Point of Contact:**

Chris McKisson
(970) 285-9985
cmckisson@ltenv.com

**MMXX**

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## 1.0 INTRODUCTION

This report was commissioned by LT Environmental, Inc. (hereinafter referred to as "the client") on January 30, 2020 for the purpose of determining what, if any, karst-related surface features are present near the Ross Draw Unit 57 Central Tank Battery site (hereinafter termed “RDU 57”, **Figure 1**) and to provide guidance on the level of remediation required. This study does not include subsurface features, which would require a geophysical survey. The study area that this report covers is in a **MEDIUM** karst occurrence zone and entirely located within Bureau of Land Management – Carlsbad Field Office managed lands (**Figure 2**).

As indicated in section ***1.3 Affected Environment***, the bedrock and overlying soil at the survey site are susceptible to sinkhole development and karst features may be hidden beneath the existing soil stratum. Risk associated with sinkhole formation can be minimized during development with proper foundation design and construction, and the control of site hydrology. The Owner/Developer must recognize, however, that a risk of sinkhole-induced damage to infrastructure does exist. The Owner/Developer must evaluate the risks and attendant costs of performing a geophysical survey prior to development, versus no geophysical survey, and must be willing to accept these risks if it is decided that a surface karst survey is sufficient. Southwest Geophysical Consulting, LLC can provide a geophysical survey. If the decision is made to conduct a geophysical survey, a cost estimate and timeline will be provided upon request.

### *1.1 Goals of this Study*

To provide the client with the location, description, photos, and boundaries of any surface karst-related features within a 200-meter boundary surrounding the pad on the RDU57 project site as provided by the client via email on January 30, 2020.

### *1.2 Summary of Findings*

No surface karst features were located within the pedestrian survey area. However, unknown hidden features may still exist beneath the surface. Caution should be exercised during remediation.

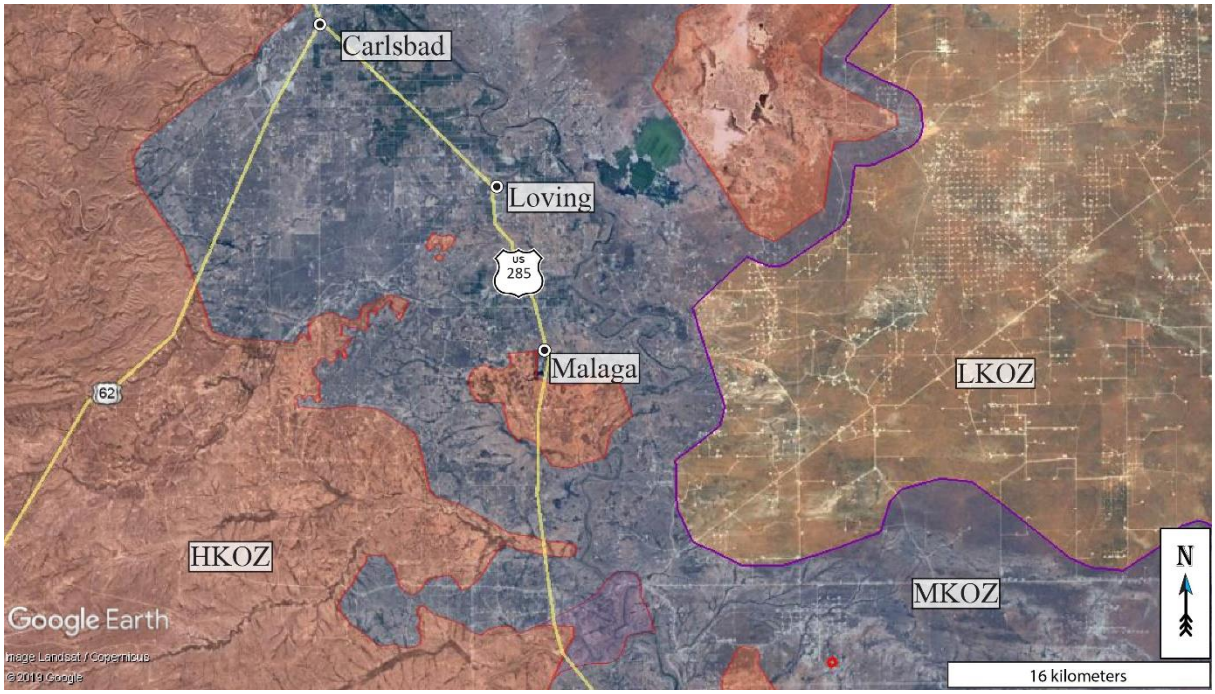


**Figure 1: Karst occurrence overview. Red transparent area is a high karst occurrence zone; blue transparent area is a medium karst occurrence zone; no color indicates a low karst occurrence zone. Study area is the red outlined area in the lower-right portion of the image. Background image credit: Google Earth. Image date: February 21, 2019. Datum: WGS-84.**

### *1.3 Affected Environment*

The RDU 57 project site is located in evaporite karst terrain, a landform that is characterized by underground drainage through solutionally enlarged conduits. Evaporite karst terrain may contain sinkholes, sinking streams, caves, and springs. Sinkholes leading to underground drainages and voids are common. These karst features, as well as occasional fissures and discontinuities in the bedrock, provide the primary sources for rapid recharge of the groundwater aquifers of the region.

The Bureau of Land Management (BLM) categorizes all areas within the Carlsbad Field Office (CFO) zone of responsibility as having either low, medium, high, or critical cave potential based on geology, occurrence of known caves, density of karst features, and potential impacts to freshwater aquifers. This project occurs within a **MEDIUM** karst occurrence zone[1] (MKOZ, **Figure 1**). A medium karst occurrence zone is defined as an area in known soluble rock types that may have a shallow insoluble overburden. These areas may contain isolated karst features such as caves and sinkholes. Groundwater recharge may not be wholly dependent on karst features, but the karst features still provide the most rapid aquifer recharge in response to surface runoff[2].

An on-site inspection revealed that there are no surface karst features within the pedestrian survey area. However, unknown buried features may exist; therefore, this action is subject to mitigation measures designed to adequately protect known and potential cave/karst resources.

## 2.0 LOCATION AND DESCRIPTION OF STUDY AREA

### *2.1 Description of Site*

The RDU 57 project site is located in Eddy County, New Mexico, 51 kilometers (31.7 miles) southeast of Carlsbad, New Mexico; 18 kilometers (11 miles) east of US-285, and 2 kilometers (1.2 miles) north of the New Mexico-Texas Border (**Figure 1** and **Figure 2**). The site is located within sections 22 and 27 of NM T26S R30E. This area is within the Chihuahuan Desert Thornscrub defined by the Southwestern Regional ReGAP Vegetation map[5] and the vegetation consists mostly of areas of grass, sparse creosote, and sparse yucca with very good visibility in most locations. See section ***2.3 Local Geology*** for the geology of the area. The pad and surrounding survey boundary are entirely within a medium karst occurrence zone (**Figure 1**) and are located entirely within BLM-CFO managed lands (**Figure 2**).

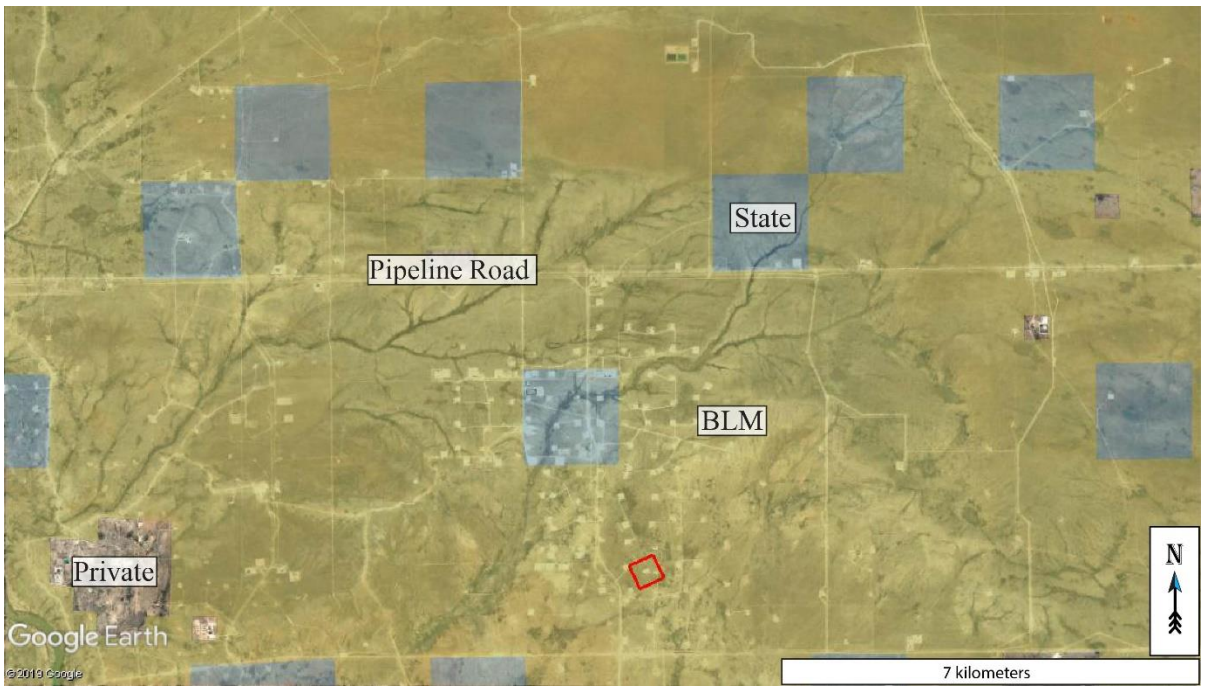


**Figure 2: Land ownership overview. Yellow transparent area: BLM-CFO managed land. Blue transparent area: New Mexico State Land Office managed land. No color: Private land. Background image credit: Google Earth. Image date: February 21, 2019. Datum: WGS-84.**

### *2.2 Description of Survey*

For this survey 10 lines were walked in a raster pattern at 50-meter (165 feet) intervals in the designated area, providing 90 to 100% coverage for features greater than 50 centimeters (20 inches) in diameter (**Table 1**).

The survey was completed by Garrett Jorgensen on January 31, 2020. The total distance walked was 4.6 kilometers (2.9 miles) and the total area covered was 0.2 square kilometers (47.0 acres).

**Table 1: Survey Track Data Files.**

| File Name | Surveyor | Date | Length (km/miles) | Area ($km^2$/Ac) |
|---|---|---|---|---|
| RDXSRV_D1S1.kmz | Jorgensen | 01/31/2020 | 4.63/2.88 | 0.19/47.0 |


**Figure 3: Survey overview. Light blue wavy lines are the actual survey lines walked. Yellow polygon is the pad site. Red polygon is the 200-meter buffer study area. Background image credit: Google Earth. Image date February 21, 2019. Datum: WGS-84.**

### *2.3 Local Geology*

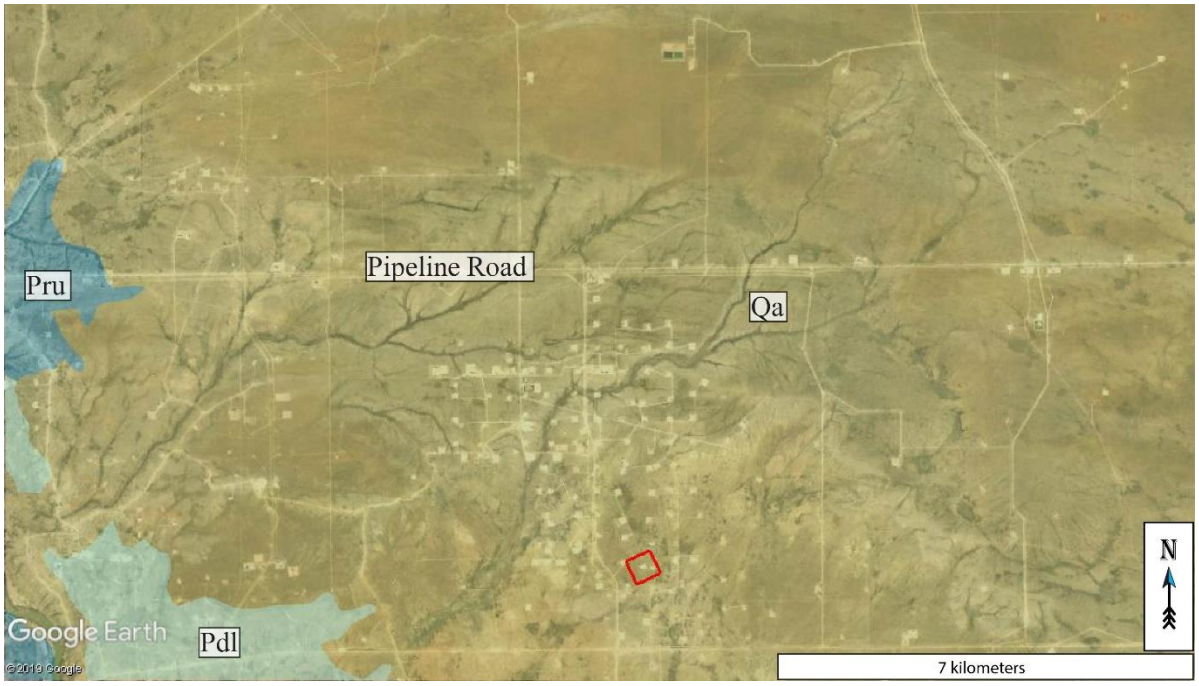


**Figure 4: Geology overview. Red polygon highlights the survey area. Pru: Permian Rustler Formation. Pdl: Permian Dewey Lake Formation. Qa: Quaternary units, locally includes both Qg: Quaternary Gatuna Formation and Qs: Quaternary windblown sand. Map credit: Geologic Map of New Mexico, scale: 1:500,000 (2003), and Google Earth. Image date: February 21, 2019. Datum: WGS-84.**

The area surveyed for the RDU 57 project is located at an elevation of 920 meters (3,020 feet), plus or minus 5 meters (15 feet), within the Quaternary Gatuna Formation (Qg – not shown, within Qa on map) and Quaternary windblown sand (Qs – not shown, within Qa on map). The Gatuna Formation is a conglomerate composed of calcite cemented limestone and sandstone cobble derived from the Guadalupe Mountains. The large proportion of calcite that makes up the matrix for this formation allows limited karst formation to occur. The entirety of the survey area is underlain by the Permian Dewey Lake Formation (Pdl), which outcrops in the southernmost section of the survey area, and Permian Rustler (Pru) Formation (which does not outcrop within the survey area). The Dewey Lake Formation is composed of calcite cemented, hematite stained quartz sand grains and is not known for forming karst. The Rustler Formation is composed of alternating layers of gypsum and dolomite, both of which are easily dissolved to form karst features[3, 4]. An onsite excavation to a depth of 4 meters (12 feet) revealed fine-grained windblown sand throughout the entire depth of the excavation. Two easily accessible geologic maps that cover the survey area are the Geologic Map of New Mexico (2003) at 1:500,000 scale[2], and the Geologic Atlas of Texas - Hobbs Sheet (1976) at 1:250,000 scale.

### *2.4 Description of Karst Features*

No surface karst features were located within the 200-meter boundary of the pedestrian survey area for the RDU 57 project.

## 3.0 RECOMMENDATIONS

No surface karst features were located during this survey. Based on the above findings, allowing use of medium karst occurrence zone spill remediation procedures may be considered by the Oil Conservation Division within the 200-meter survey area. Confirmation to use a lower remediation level should be received from the Oil Conservation Division before proceeding.

Vigilance during remediation is paramount. If voids are encountered during trenching or digging contact the New Mexico State Oil Conservation Division if on State land, and the Bureau of Land Management – Carlsbad Field Office at (575) 234-5972 if on BLM land and request an onsite investigation from a karst expert. A karst consultant can generally be onsite in Eddy County within five hours.

## 4.0 REFERENCES


1. Rybacki, K., *Karst Potential Map.* CFO Basemap, 2019.
2. Scholle, P.A., *Geologic Map of New Mexico.* 2003. (1:500,000).
3. Johnson, K.S., *Evaporite Karst in the United States.* Carbonates and Evaporites, 1997. **12(1)**: p. 2-14.
4. Martinez, J.D., K.S. Johnson, and J.T. Neal, *Sinkholes in Evaporite Rocks.* American Scientist, 1998. **86(1-2)**: p. 38-51.
5. Whitehead, W. and C. Flynn, *Plant Utilization in Southeastern New Mexico: Botany, Ethnobotany, and Archaeology.* 2017, Carlsbad, NM: Bureau of Land Management, Carlsbad Field Office.


## 5.0 GLOSSARY OF TERMS

| | |
|---|---|
| BLM | Bureau of Land Management |
| CFO | Carlsbad Field Office |
| cave | A natural opening at the surface, large enough for a person to enter. |
| GPS | Global Positioning System |
| NMSLO | New Mexico State Land Office |
| playa lake | A natural depression on the surface that collects rainwater. Some contain swallets and/or caves, others do not. |
| pseudokarst | Karst-like terrain that forms through processes other than dissolution. |
| swallet | A natural opening in the surface, too small for a person, that drains water to an aquifer. Some are "open," meaning a void can be seen below; some are "closed," meaning they are full of sediment. |
| WGS | World Geodetic System |

# ATTACHMENT 3: PHOTOGRAPHIC LOG

**Release footprint – view north**

| | | |
|---|---|---|
| Project: 034819059 | WPX Energy Permian, Inc.<br>Ross Draw Unit #057 | LTE Advancing Opportunity |
| September 19, 2019 | Photographic Log | |

**Release footprint – view south**

| | | |
|---|---|---|
| Project: 034819059 | WPX Energy Permian, Inc.<br>Ross Draw Unit #057 | LTE Advancing Opportunity |
| September 19, 2019 | Photographic Log | |

**Excavation area – view north**

| | | |
|---|---|---|
| Project: 034819059 | WPX Energy Permian, Inc.<br>Ross Draw Unit #057 | LTE Advancing Opportunity |
| November 15, 2019 | Photographic Log | |

**Excavation area – view southeast**

| | | |
|---|---|---|
| Project: 034819059 | WPX Energy Permian, Inc.<br>Ross Draw Unit #057 | Advancing Opportunity |
| November 15, 2019 | Photographic<br>Log | |

**Excavation area – view north**

| | | |
|---|---|---|
| Project: 034819059 | WPX Energy Permian, Inc.<br>Ross Draw Unit #057 | LTE Advancing Opportunity |
| December 3, 2019 | Photographic Log | |

**Excavation area – view southeast**

| | | |
|---|---|---|
| Project: 034819059 | WPX Energy Permian, Inc.<br>Ross Draw Unit #057 | LTE Advancing Opportunity |
| December 3, 2019 | Photographic Log | |

# ATTACHMENT 4: SOIL SAMPLE LITHOLOGIC LOGS

LT Environmental, Inc.
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Carlsbad, New Mexico 88220
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BH or PH Name: BH01 | Date: 12/3/19
Site Name: RDU 57
RP or Incident Number: 2RP-5716
LTE Job Number: 034819059
Logged By: AB | Method: Hand Auger
Hole Diameter: 2.5" | Total Depth: 15'
Lat/Long: 32.0198060, -103.8722373 | Field Screening: Chloride, PID

## LITHOLOGIC / SOIL SAMPLING LOG

Comments: BDL : Below Detection Limit

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 0 | | |
| | | | | | | 1 | | |
| | | | | | | | | excavated |
| M | BDL | >15000 | YES | BH01 | 3' | 3 | SP | brown poorly graded sand (m.), no odor, no plasticity |
| | | | | | | 4 | | |
| | | | | | | 5 | | |
| M | 148 | 3984 | NO | | 6' | 6 | SP | |
| M | 268 | 2336 | NO | | 7' | 7 | SP | |
| M | 888 | 1223 | NO | | 8' | 8 | Caliche | light brown-tan poorly cemented caliche, well-sorted, odor |
| M | 1288 | 842 | NO | | 9' | 9 | Caliche | " no odor |
| | | | | | | 10 | | |
| | | | | | 11' | 11 | Caliche | " odor |
| D | 120 | 317 | NO | | | | | |
| D | 388 | 126 | NO | BH01A | 12' | 12 | Caliche | " odor |

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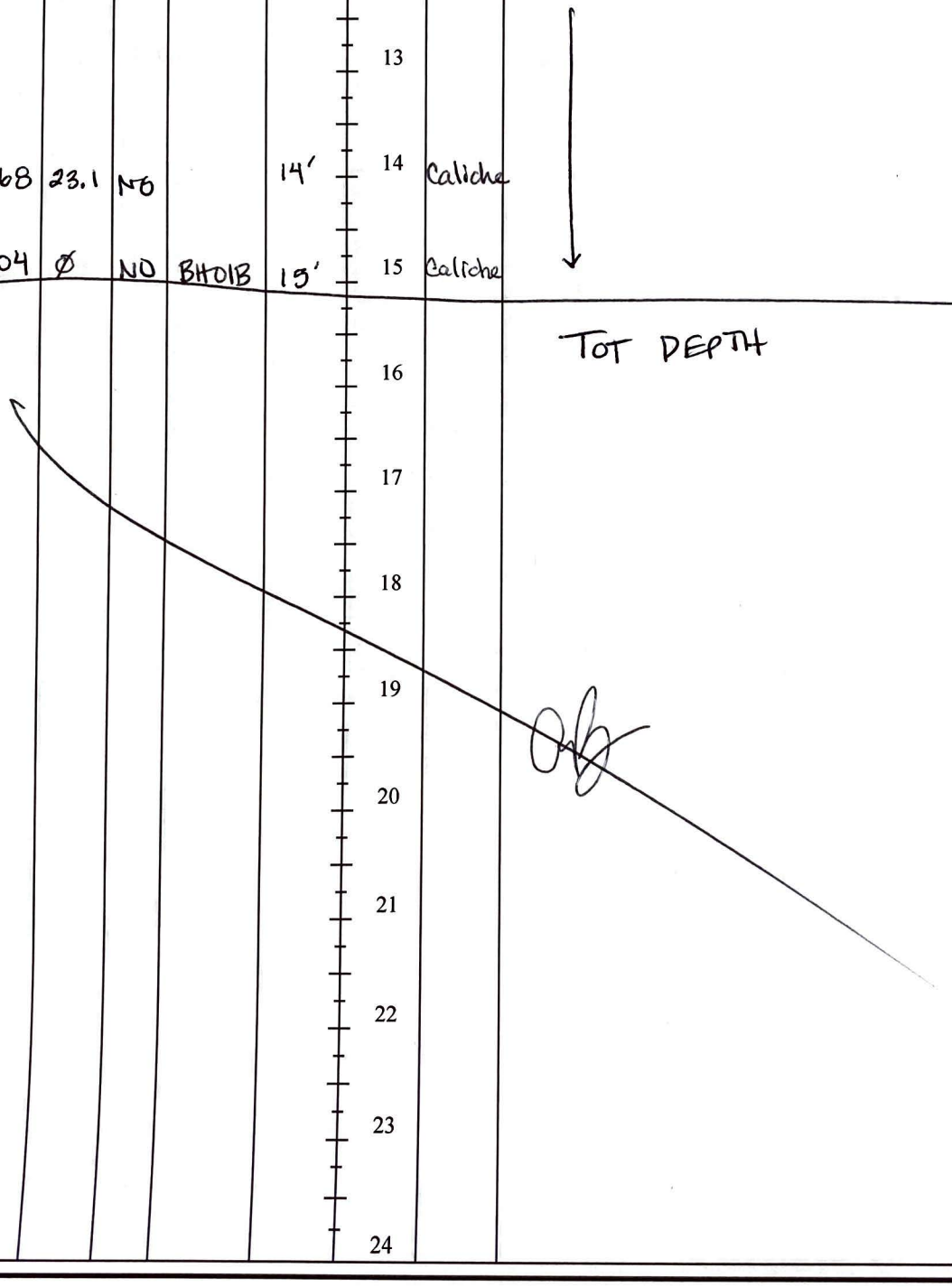
| | |
|---|---|
| BH or PH Name: BH01 | Date: 12/3/19 |
| Site Name: RDU 57 | |
| RP or Incident Number: 2RP-5716 | |
| LTE Job Number: 6348 19059 | |
| Logged By: AB | Method: Hand Auger |
| Lat/Long: 32.01880661, -103.8722731 | Field Screening: Chloride, PID |
| Hole Diameter: 2.5" | Total Depth: 15' |

Comments:

## LITHOLOGIC / SOIL SAMPLING LOG

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| D | 5768 | 23.1 | NO | | 14' | 14 | Caliche | |
| M | 4904 | Ø | NO | BH01B | 15' | 15 | Caliche | TOT DEPTH |



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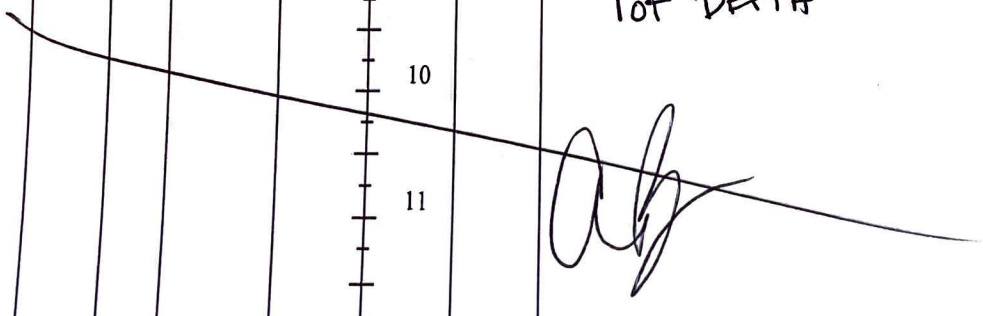
| | |
|---|---|
| BH or PH Name: BH02 | Date: 12/3/19 |
| Site Name: RDU 57 | |
| RP or Incident Number: 2RP-5716 | |
| LTE Job Number: 034819059 | |
| Logged By: AB | Method: Hand Auger |
| Lat/Long: | Field Screening: Chloride, PID |
| Hole Diameter: 2.5" | Total Depth: 8' |

## LITHOLOGIC / SOIL SAMPLING LOG

Comments: BDL : Below Detection Limit

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| D | 148 | Ø | NO | BH02 | 1' | 1 | SP | brown poorly-graded sand (m.), no plasticity, no odor |
| D | BDL | Ø | NO | | 3' | 3 | SP | |
| D | BDL | Ø | NO | | 5' | 5 | SP | |
| D | BDL | Ø | NO | BH02A | 8' | 8 | Caliche lt | brown to tan poorly cemented, well sorted caliche |
| | | | | | | 9 | | TOT DEPTH |



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| | |
|---|---|
| BH or PH Name: BH03 | Date: 12/3/19 |
| Site Name: RDU 57 | |
| RP or Incident Number: 2RP-5716 | |
| LTE Job Number: 034819059 | |
| Logged By: AB | Method: Hand Auger |
| Hole Diameter: 2.5 " | Total Depth: 9.5' |
| Lat/Long: 32.018877522, -103.87228857 | Field Screening: Chloride, PID |

## LITHOLOGIC / SOIL SAMPLING LOG

Comments: BDL : Below Detection Limit

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 0 | | excavated |
| | | | | | | 1 | | |
| | | | | | | 2 | | |
| | | | | | | 3 | | |
| M | BDL | Ø | NO | BH03 | 5.5' | 4 | SP | brown, poorly-graded sand (m.), no plasticity, no odor |
| | | | | | | 5 | | |
| | | | | | | 6 | | |
| M | BDL | Ø | NO | | 7.5' | 7 | SP | |
| | | | | | | 8 | | |
| | | | | | | 9 | | |
| D | BDL | Ø | NO | BH03A | 9.5' | Caliche | | tan to light brown poorly cemented caliche, no odor |
| | | | | | | 10 | | TOT DEPTH |
| | | | | | | 11 | | |
| | | | | | | 12 | | |

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| | |
|---|---|
| BH or PH Name: BH04 | Date: 12/3/19 |
| Site Name: RDU 57 | |
| RP or Incident Number: 2RP-5716 | |
| LTE Job Number: 034819059 | |
| Logged By: AB | Method: Hand Auger |
| Lat/Long: 32.0197326, -103.8721835 | Field Screening: Chloride, PID |
| Hole Diameter: 2.5" | Total Depth: 9' |

## LITHOLOGIC / SOIL SAMPLING LOG

Comments: BDL : Below Detection Limit

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| M | BDL | Ø | NO | BH04 | 1' | 1 | SP | brown, poorly-graded sand (m.), no plasticity, no odor |
| M | BDL | Ø | NO | | 3' | 3 | SP | |
| M | BDL | Ø | NO | | 5' | 5 | SP | |
| D | BDL | Ø | NO | | 7' | 7 | Caliche | light brown/tan poorly cemented caliche, no odor; sandy (m.) matrix |
| D | BDL | Ø | NO | BH04A | 9' | 9 | Caliche | TOT DEPTH |

AB

LT Environmental, Inc.
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| | |
|---|---|
| BH or PH Name: BH05 | Date: 12/3/20 |
| Site Name: RDU 57 | |
| RP or Incident Number: 2RP-5716 | |
| LTE Job Number: 034819059 | |
| Logged By: AB | Method: Hand Auger |
| Lat/Long: 32.01882315, -103.8721904 | Field Screening: Chloride, PID |
| Hole Diameter: 2.5" | Total Depth: 24' |

## LITHOLOGIC / SOIL SAMPLING LOG

Comments: BDL: Below Detection Limit

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| 12/3 M | BDL | Ø | NO | BH05 | 1' | 1 | SP | brown poorly-graded sand (m.) no plasticity, no odor |
| M | BDL | Ø | NO | | 3' | 3 | SP | |
| M | BDL | Ø | NO | | 5' | 5 | SP | |
| M | BDL | Ø | NO | | 7' | 7 | SP | |
| 12/3 D | BDL | Ø | NO | BH05A | 9' | 9 | Caliche | tan poorly-cemented caliche, poorly graded sand (m.) matrix, no odor |
| 1/23 D | BDL | Ø | NO | | 11' | 11 | SP | brown poorly-graded sand (m.) no plasticity, no odor |

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| BH or PH Name: | Date: |
|---|---|
| BH05 | 1/23 - 1/28/20 |
| Site Name: RDU 57 | |
| RP or Incident Number: 2RP-5716 | |
| LTE Job Number: 034819059 | |
| Logged By: AB | Method: Hand Auger |
| Hole Diameter: 2.5" | Total Depth: 24' |

**LITHOLOGIC / SOIL SAMPLING LOG**

Lat/Long: 32.01882315, -103.8721704
Field Screening: Chloride, PID

Comments: BDL: Below detection limit

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| 1/23 | | | | | | | | |
| M | BDL | Ø | NO | | 12 | 12 | SP | brown poorly graded sand (m.), no plasticity, no odor |
| | | | | | | 13 | | |
| M | BDL | Ø | NO | | 14 | 14 | SP | * sands fining upwards sequence |
| | | | | | | 15 | | |
| M | BDL | Ø | NO | | 16' | 16 | SP | |
| | | | | | | 17 | | |
| M | BDL | Ø | NO | | 18' | 18 | SP | |
| | | | | | | 19 | | |
| M | BDL | Ø | NO | | 20' | 20 | SP | |
| | | | | | | 21 | | |
| 1/23 M | BDL | Ø | NO | | 22' | 22 | SP | |
| | | | | | | 23 | | |
| 1/28/20 M | BDL | Ø | NO | BH05B | 24' | 24 | SP | lt brown, poorly-graded sand (c.), no plasticity, no odor |

TOT DEPTH

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| | |
|---|---|
| BH or PH Name: BH06 | Date: 12/3/19 |
| Site Name: RDU 57 | |
| RP or Incident Number: 2RP-5716 | |
| LTE Job Number: 034819059 | |
| Logged By: AB | Method: Hand Auger |
| Lat/Long: 32.0188699, -103.872255 | Field Screening: Chloride, PID |
| Hole Diameter: 2.5" | Total Depth: 9' |

**LITHOLOGIC / SOIL SAMPLING LOG**

Comments: BDL : Below Detection Limit

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| M | BDL | Ø | NO | BH06 | 1' | 1 | SP | brown, poorly-graded sand (m.), no plasticity, no odor |
| M | BDL | Ø | NO | | 3' | 3 | SP | |
| M | BDL | Ø | NO | | 5' | 5 | SP | |
| D | BDL | Ø | NO | | 7' | 7 | Caliche | tan poorly-cemented caliche, no odor, sandy (m.) matrix |
| D | 120 | Ø | NO | BH06A | 9' | 9 | Caliche | TOT DEPTH |

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| | |
|---|---|
| BH or PH Name: BH07 | Date: 12/3/19 |
| Site Name: RDU 57 | |
| RP or Incident Number: 2RP-5716 | |
| LTE Job Number: 034819059 | |
| Logged By: AB | Method: Hand Auger |
| Lat/Long: 32.018885477, -103.87236163 | Field Screening: Chloride, PID |
| Hole Diameter: 2.5" | Total Depth: 9' |

## LITHOLOGIC / SOIL SAMPLING LOG

Comments: BDL : Below Detection Limit

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 0 | | PAD SURFACE CALICHE |
| D | BDL | Ø | NO | | 1' | 1 | | pad surface caliche (white-grey) fine sand - gravel size |
| | | | | | | 2 | | |
| D | BDL | Ø | NO | | 3' | 3 | SP | (native) brown poorly-graded sand (m.), no plasticity, no odor |
| | | | | | | 4 | | |
| D | 120 | Ø | NO | | 5' | 5 | SP | |
| | | | | | | 6 | | |
| D | BDL | Ø | NO | | 7' | 7 | SP | |
| | | | | | | 8 | | |
| D | BDL | Ø | NO | | 9' | 9 | SP | TOT DEPTH |
| | | | | | | 10 | | |
| | | | | | | 11 | | |
| | | | | | | 12 | | |

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| | |
|---|---|
| BH or PH Name: BH08 | Date: 12/3/19 |
| Site Name: RDU 57 | |
| RP or Incident Number: 2RP-5716 | |
| LTE Job Number: 034819059 | |
| Logged By: AB | Method: Hand Auger |
| Lat/Long: 32.018844497, -103.8722447 | Field Screening: Chloride, PID |
| Hole Diameter: 2.5" | Total Depth: 15' |

## LITHOLOGIC / SOIL SAMPLING LOG

Comments: BDL : Below Detection Limit

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 0 | | excavated |
| | | | | | | 1 | | |
| | | | | | | 2 | | |
| | | | | | | 3 | | |
| | | | | | | 4 | | |
| | | | | | | 5 | | |
| | | * | YES surface | * | | * 6 | SP | odor * |
| M | BDL | Ø | NO | BH08 | 7' | 7 | SP | brown, poorly-graded sand (m.), no plasticity, no odor |
| | | | | | | 8 | | |
| D | 580 | Ø | NO | BH08A | 9' | 9 | Caliche | tan poorly-cemented caliche, sand (m.) matrix |
| | | | | | | 10 | | |
| M | 6796 | Ø | NO | | 11' | 11 | Caliche | |
| | | | | | | 12 | | |

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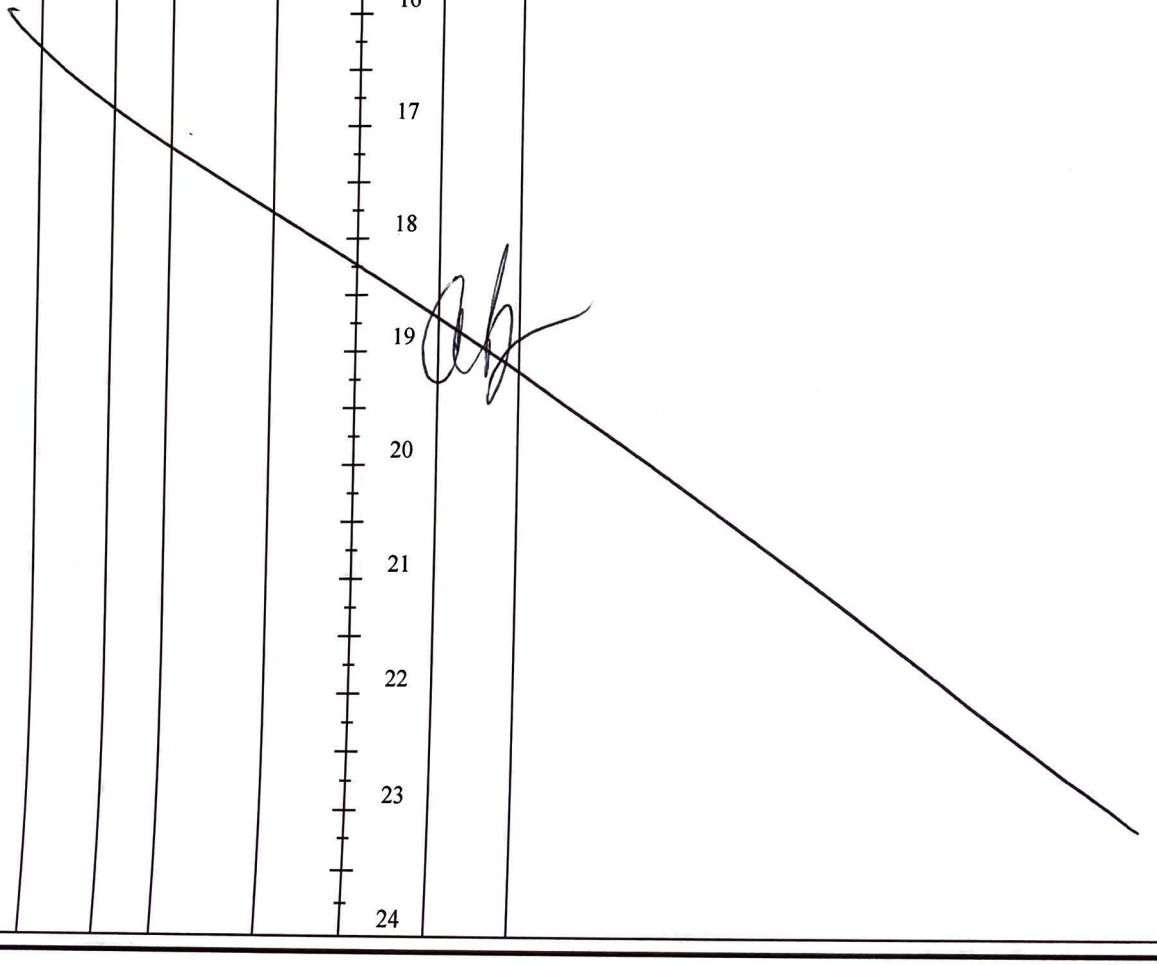
| | |
|---|---|
| BH or PH Name: BH08 | Date: 12/13/19 |
| Site Name: RDU 57 | |
| RP or Incident Number: 2RP-5716 | |
| LTE Job Number: 034819059 | |
| Logged By: AB | Method: Hand Auger |
| Lat/Long: 32.01884497, -103.8722447 | Field Screening: Chloride, PID |
| Hole Diameter: 2.5" | Total Depth: 15' |

**LITHOLOGIC / SOIL SAMPLING LOG**

Comments: BDL: Below Detection Limit

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| M | 12680 | 0 | NO | | 13' | 13 | Caliche | |
| M | 15528 | 0 | NO | BH08B | 15' | 15 | Caliche | TOT DEPTH |



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| | |
|---|---|
| BH or PH Name: BH09 | Date: 12/3/19 |
| Site Name: RDU 57 | |
| RP or Incident Number: 2RP-5716 | |
| LTE Job Number: 034819059 | |
| Logged By: AB | Method: Hand Auger |
| Lat/Long: 32.01884252, -103.8723278 | Field Screening: Chloride, PID |
| Hole Diameter: 2.5" | Total Depth: 3' |

LITHOLOGIC / SOIL SAMPLING LOG

Comments: BDL : Below Detection Limit

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 0 | | |
| | | | | | | 1 | | excavated |
| M | BDL | ø | NO | BH09 | 2' | 2 | SP | Brown sand (m.), poorly graded, no odor |
| M | BDL | ø | NO | BH09A | 3' | 3 | SP | ↓ |
| | | | | | | 4 | | TOT DEPTH. |
| | | | | | | 5 | | |
| | | | | | | 6 | | |
| | | | | | | 7 | | |
| | | | | | | 8 | | |
| | | | | | | 9 | | |
| | | | | | | 10 | | |
| | | | | | | 11 | | |
| | | | | | | 12 | | |

# ATTACHMENT 5: LABORATORY ANALYTICAL REPORTS

# Analytical Report 644967

## for

## LT Environmental, Inc.

**Project Manager: Chris McKisson**

**RDU 574**

**034819059**

**05-DEC-19**

Collected By: Client


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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

05-DEC-19

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

Reference: XENCO Report No(s): **644967**
**RDU 574**
Project Address: Rural Eddie County

**Chris McKisson**:

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) 644967. 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. 644967 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

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

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

# Sample Cross Reference 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| BH02 | S | 12-03-19 10:33 | 1 ft | 644967-001 |
| BH02A | S | 12-03-19 11:05 | 8 ft | 644967-002 |
| BH03 | S | 12-03-19 12:25 | 5.5 ft | 644967-003 |
| BH03A | S | 12-03-19 12:45 | 9.5 ft | 644967-004 |
| BH04 | S | 12-03-19 12:50 | 1 ft | 644967-005 |
| BH04A | S | 12-03-19 13:30 | 9 ft | 644967-006 |
| BH05 | S | 12-03-19 13:35 | 1 ft | 644967-007 |
| BH05A | S | 12-03-19 13:55 | 9 ft | 644967-008 |
| BH06 | S | 12-03-19 14:00 | 1 ft | 644967-009 |
| BH06A | S | 12-03-19 14:45 | 9 ft | 644967-010 |
| BH07 | S | 12-03-19 15:10 | 1 ft | 644967-011 |
| BH07A | S | 12-03-19 15:40 | 9 ft | 644967-012 |
| BH09 | S | 12-03-19 15:45 | 2 ft | 644967-013 |
| BH09A | S | 12-03-19 15:47 | 3 ft | 644967-014 |

# CASE NARRATIVE

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

***Project Name: RDU 574***

Project ID: *034819059*
Work Order Number(s): *644967*

Report Date: *05-DEC-19*
Date Received: *12/04/2019*

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3109451 BTEX by EPA 8021B

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

# Certificate of Analysis Summary 644967

## LT Environmental, Inc., Arvada, CO

## Project Name: RDU 574

**Project Id:** 034819059
**Contact:** Chris McKisson
**Project Location:** Rural Eddie County

**Date Received in Lab:** Wed Dec-04-19 08:45 am
**Report Date:** 05-DEC-19
**Project Manager:** Jessica Kramer

| Analysis Requested | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 644967-001 | | 644967-002 | | 644967-003 | | 644967-004 | | 644967-005 | | 644967-006 | |
| | ***Field Id:*** | BH02 | | BH02A | | BH03 | | BH03A | | BH04 | | BH04A | |
| | ***Depth:*** | 1- ft | | 8- ft | | 5.5- ft | | 9.5- ft | | 1- ft | | 9- ft | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Dec-03-19 10:33 | | Dec-03-19 11:05 | | Dec-03-19 12:25 | | Dec-03-19 12:45 | | Dec-03-19 12:50 | | Dec-03-19 13:30 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Dec-04-19 10:00 | | Dec-04-19 10:00 | | Dec-04-19 10:00 | | Dec-04-19 10:00 | | Dec-04-19 10:00 | | Dec-04-19 10:00 | |
| | ***Analyzed:*** | Dec-04-19 12:23 | | Dec-04-19 12:41 | | Dec-04-19 12:58 | | Dec-04-19 13:16 | | Dec-04-19 13:33 | | Dec-04-19 13:51 | |
| | ***Units/RL:*** | mg/kg | 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 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00200 | 0.00200 | <0.00200 | 0.00200 |
| Toluene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00200 | 0.00200 | <0.00200 | 0.00200 |
| Ethylbenzene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00200 | 0.00200 | <0.00200 | 0.00200 |
| m,p-Xylenes | | <0.00400 | 0.00400 | <0.00399 | 0.00399 | <0.00398 | 0.00398 | <0.00402 | 0.00402 | <0.00399 | 0.00399 | <0.00401 | 0.00401 |
| o-Xylene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00200 | 0.00200 | <0.00200 | 0.00200 |
| Xylenes, Total | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00200 | 0.00200 | <0.00200 | 0.00200 |
| Total BTEX | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00200 | 0.00200 | <0.00200 | 0.00200 |
| **Chloride by EPA 300** | ***Extracted:*** | Dec-04-19 11:00 | | Dec-04-19 11:00 | | Dec-04-19 11:00 | | Dec-04-19 11:00 | | Dec-04-19 11:00 | | Dec-04-19 11:00 | |
| | ***Analyzed:*** | Dec-04-19 13:06 | | Dec-04-19 13:12 | | Dec-04-19 13:18 | | Dec-04-19 13:24 | | Dec-04-19 13:31 | | Dec-04-19 13:49 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 135 | 50.4 | <10.0 | 10.0 | <9.92 | 9.92 | 11.8 | 9.98 | <9.88 | 9.88 | <9.82 | 9.82 |
| **TPH by SW8015 Mod** | ***Extracted:*** | Dec-04-19 11:00 | | Dec-04-19 11:00 | | Dec-04-19 11:00 | | Dec-04-19 11:00 | | Dec-04-19 11:00 | | Dec-04-19 11:00 | |
| | ***Analyzed:*** | Dec-04-19 11:20 | | Dec-04-19 11:40 | | Dec-04-19 12:00 | | Dec-04-19 12:00 | | Dec-04-19 12:19 | | Dec-04-19 12:19 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | <50.0 | 50.0 | <49.8 | 49.8 | <50.0 | 50.0 | <49.8 | 49.8 | <50.1 | 50.1 | <50.1 | 50.1 |
| Diesel Range Organics (DRO) | | <50.0 | 50.0 | <49.8 | 49.8 | <50.0 | 50.0 | <49.8 | 49.8 | <50.1 | 50.1 | <50.1 | 50.1 |
| Motor Oil Range Hydrocarbons (MRO) | | <50.0 | 50.0 | <49.8 | 49.8 | <50.0 | 50.0 | <49.8 | 49.8 | <50.1 | 50.1 | <50.1 | 50.1 |
| Total GRO-DRO | | <50.0 | 50.0 | <49.8 | 49.8 | <50.0 | 50.0 | <49.8 | 49.8 | <50.1 | 50.1 | <50.1 | 50.1 |
| Total TPH | | <50.0 | 50.0 | <49.8 | 49.8 | <50.0 | 50.0 | <49.8 | 49.8 | <50.1 | 50.1 | <50.1 | 50.1 |



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

Jessica Kramer
Project Assistant

# Certificate of Analysis Summary 644967

## LT Environmental, Inc., Arvada, CO

## Project Name: RDU 574

**Project Id:** 034819059
**Contact:** Chris McKisson
**Project Location:** Rural Eddie County

**Date Received in Lab:** Wed Dec-04-19 08:45 am
**Report Date:** 05-DEC-19
**Project Manager:** Jessica Kramer

| Analysis Requested | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 644967-007 | | 644967-008 | | 644967-009 | | 644967-010 | | 644967-011 | | 644967-012 | |
| | ***Field Id:*** | BH05 | | BH05A | | BH06 | | BH06A | | BH07 | | BH07A | |
| | ***Depth:*** | 1- ft | | 9- ft | | 1- ft | | 9- ft | | 1- ft | | 9- ft | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Dec-03-19 13:35 | | Dec-03-19 13:55 | | Dec-03-19 14:00 | | Dec-03-19 14:45 | | Dec-03-19 15:10 | | Dec-03-19 15:40 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Dec-04-19 10:00 | | Dec-04-19 10:00 | | Dec-04-19 10:00 | | Dec-04-19 10:00 | | Dec-04-19 10:00 | | Dec-04-19 10:00 | |
| | ***Analyzed:*** | Dec-04-19 14:08 | | Dec-04-19 14:25 | | Dec-04-19 14:43 | | Dec-04-19 15:00 | | Dec-04-19 17:40 | | Dec-04-19 17:14 | |
| | ***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 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00201 | 0.00201 |
| Toluene | | <0.00199 | 0.00199 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00201 | 0.00201 |
| Ethylbenzene | | <0.00199 | 0.00199 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00201 | 0.00201 |
| m,p-Xylenes | | <0.00398 | 0.00398 | <0.00397 | 0.00397 | <0.00400 | 0.00400 | <0.00398 | 0.00398 | <0.00402 | 0.00402 | <0.00402 | 0.00402 |
| o-Xylene | | <0.00199 | 0.00199 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00201 | 0.00201 |
| Xylenes, Total | | <0.00199 | 0.00199 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00201 | 0.00201 |
| Total BTEX | | <0.00199 | 0.00199 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00201 | 0.00201 |
| **Chloride by EPA 300** | ***Extracted:*** | Dec-04-19 11:00 | | Dec-04-19 11:00 | | Dec-04-19 11:00 | | Dec-04-19 11:00 | | Dec-04-19 11:00 | | Dec-04-19 11:00 | |
| | ***Analyzed:*** | Dec-04-19 13:56 | | Dec-04-19 14:02 | | Dec-04-19 14:08 | | Dec-04-19 14:27 | | Dec-04-19 14:33 | | Dec-04-19 14:40 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | <10.0 | 10.0 | <10.0 | 10.0 | <9.88 | 9.88 | 94.5 | 9.94 | 101 | 10.1 | <10.0 | 10.0 |
| **TPH by SW8015 Mod** | ***Extracted:*** | Dec-04-19 11:00 | | Dec-04-19 11:00 | | Dec-04-19 11:00 | | Dec-04-19 11:00 | | Dec-04-19 11:00 | | Dec-04-19 11:00 | |
| | ***Analyzed:*** | Dec-04-19 12:39 | | Dec-04-19 12:39 | | Dec-04-19 12:59 | | Dec-04-19 12:59 | | Dec-04-19 13:18 | | Dec-04-19 13:38 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | <50.2 | 50.2 | <50.2 | 50.2 | <50.2 | 50.2 | <50.1 | 50.1 | <50.1 | 50.1 | <49.8 | 49.8 |
| Diesel Range Organics (DRO) | | <50.2 | 50.2 | <50.2 | 50.2 | <50.2 | 50.2 | <50.1 | 50.1 | <50.1 | 50.1 | <49.8 | 49.8 |
| Motor Oil Range Hydrocarbons (MRO) | | <50.2 | 50.2 | <50.2 | 50.2 | <50.2 | 50.2 | <50.1 | 50.1 | <50.1 | 50.1 | <49.8 | 49.8 |
| Total GRO-DRO | | <50.2 | 50.2 | <50.2 | 50.2 | <50.2 | 50.2 | <50.1 | 50.1 | <50.1 | 50.1 | <49.8 | 49.8 |
| Total TPH | | <50.2 | 50.2 | <50.2 | 50.2 | <50.2 | 50.2 | <50.1 | 50.1 | <50.1 | 50.1 | <49.8 | 49.8 |



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

Jessica Kramer
Project Assistant

# Certificate of Analysis Summary 644967

## LT Environmental, Inc., Arvada, CO

## Project Name: RDU 574

**Project Id:** 034819059
**Contact:** Chris McKisson
**Project Location:** Rural Eddie County

**Date Received in Lab:** Wed Dec-04-19 08:45 am
**Report Date:** 05-DEC-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 644967-013 | | 644967-014 | | | | | |
| | ***Field Id:*** | BH09 | | BH09A | | | | | |
| | ***Depth:*** | 2- ft | | 3- ft | | | | | |
| | ***Matrix:*** | SOIL | | SOIL | | | | | |
| | ***Sampled:*** | Dec-03-19 15:45 | | Dec-03-19 15:47 | | | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Dec-04-19 10:00 | | Dec-04-19 10:00 | | | | | |
| | ***Analyzed:*** | Dec-04-19 18:15 | | Dec-04-19 18:32 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Benzene | | <0.00201 | 0.00201 | <0.00199 | 0.00199 | | | | |
| Toluene | | <0.00201 | 0.00201 | <0.00199 | 0.00199 | | | | |
| Ethylbenzene | | <0.00201 | 0.00201 | <0.00199 | 0.00199 | | | | |
| m,p-Xylenes | | <0.00402 | 0.00402 | <0.00398 | 0.00398 | | | | |
| o-Xylene | | <0.00201 | 0.00201 | <0.00199 | 0.00199 | | | | |
| Xylenes, Total | | <0.00201 | 0.00201 | <0.00199 | 0.00199 | | | | |
| Total BTEX | | <0.00201 | 0.00201 | <0.00199 | 0.00199 | | | | |
| **Chloride by EPA 300** | ***Extracted:*** | Dec-04-19 11:00 | | Dec-04-19 11:00 | | | | | |
| | ***Analyzed:*** | Dec-04-19 14:46 | | Dec-04-19 15:05 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Chloride | | 169 | 10.1 | 24.2 | 9.92 | | | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | Dec-04-19 11:00 | | Dec-04-19 11:00 | | | | | |
| | ***Analyzed:*** | Dec-04-19 13:38 | | Dec-04-19 13:58 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Gasoline Range Hydrocarbons (GRO) | | <49.9 | 49.9 | <50.0 | 50.0 | | | | |
| Diesel Range Organics (DRO) | | <49.9 | 49.9 | <50.0 | 50.0 | | | | |
| Motor Oil Range Hydrocarbons (MRO) | | <49.9 | 49.9 | <50.0 | 50.0 | | | | |
| Total GRO-DRO | | <49.9 | 49.9 | <50.0 | 50.0 | | | | |
| Total TPH | | <49.9 | 49.9 | <50.0 | 50.0 | | | | |





Jessica Kramer
Project Assistant

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

Sample Id: **BH02** Matrix: Soil Date Received:12.04.19 08.45
Lab Sample Id: 644967-001 Date Collected: 12.03.19 10.33 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: MAB % Moisture:
Analyst: MAB Date Prep: 12.04.19 11.00 Basis: Wet Weight
Seq Number: 3109449

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **135** | 50.4 | mg/kg | 12.04.19 13.06 | | 5 |

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
Tech: DTH % Moisture:
Analyst: DTH Date Prep: 12.04.19 11.00 Basis: Wet Weight
Seq Number: 3109448

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 12.04.19 11.20 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 12.04.19 11.20 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 12.04.19 11.20 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 12.04.19 11.20 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 12.04.19 11.20 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 120 | % | 70-135 | 12.04.19 11.20 | |
| o-Terphenyl | 84-15-1 | 131 | % | 70-135 | 12.04.19 11.20 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH02** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-001 | Date Collected: | 12.03.19 10.33 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109451 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.23 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.23 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.23 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00400 | 0.00400 | mg/kg | 12.04.19 12.23 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.23 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.23 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.23 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 96 | % | 70-130 | 12.04.19 12.23 | |
| 1,4-Difluorobenzene | 540-36-3 | 100 | % | 70-130 | 12.04.19 12.23 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH02A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-002 | Date Collected: | 12.03.19 11.05 | Sample Depth: | 8 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109449 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <10.0 | 10.0 | mg/kg | 12.04.19 13.12 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109448 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.8 | 49.8 | mg/kg | 12.04.19 11.40 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.8 | 49.8 | mg/kg | 12.04.19 11.40 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.8 | 49.8 | mg/kg | 12.04.19 11.40 | U | 1 |
| Total GRO-DRO | PHC628 | <49.8 | 49.8 | mg/kg | 12.04.19 11.40 | U | 1 |
| Total TPH | PHC635 | <49.8 | 49.8 | mg/kg | 12.04.19 11.40 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 104 | % | 70-135 | 12.04.19 11.40 | |
| o-Terphenyl | 84-15-1 | 115 | % | 70-135 | 12.04.19 11.40 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH02A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-002 | Date Collected: | 12.03.19 11.05 | Sample Depth: | 8 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109451 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.41 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.41 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.41 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 12.04.19 12.41 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.41 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.41 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.41 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 101 | % | 70-130 | 12.04.19 12.41 | |
| 1,4-Difluorobenzene | 540-36-3 | 99 | % | 70-130 | 12.04.19 12.41 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH03** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-003 | Date Collected: | 12.03.19 12.25 | Sample Depth: | 5.5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109449 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.92 | 9.92 | mg/kg | 12.04.19 13.18 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109448 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 12.04.19 12.00 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 12.04.19 12.00 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 12.04.19 12.00 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 12.04.19 12.00 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 12.04.19 12.00 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 104 | % | 70-135 | 12.04.19 12.00 | |
| o-Terphenyl | 84-15-1 | 113 | % | 70-135 | 12.04.19 12.00 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH03** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-003 | Date Collected: | 12.03.19 12.25 | Sample Depth: | 5.5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109451 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 12.04.19 12.58 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 12.04.19 12.58 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 12.04.19 12.58 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 12.04.19 12.58 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 12.04.19 12.58 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 12.04.19 12.58 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 12.04.19 12.58 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 99 | % | 70-130 | 12.04.19 12.58 | |
| 1,4-Difluorobenzene | 540-36-3 | 100 | % | 70-130 | 12.04.19 12.58 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH03A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-004 | Date Collected: | 12.03.19 12.45 | Sample Depth: | 9.5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109449 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **11.8** | 9.98 | mg/kg | 12.04.19 13.24 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109448 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.8 | 49.8 | mg/kg | 12.04.19 12.00 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.8 | 49.8 | mg/kg | 12.04.19 12.00 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.8 | 49.8 | mg/kg | 12.04.19 12.00 | U | 1 |
| Total GRO-DRO | PHC628 | <49.8 | 49.8 | mg/kg | 12.04.19 12.00 | U | 1 |
| Total TPH | PHC635 | <49.8 | 49.8 | mg/kg | 12.04.19 12.00 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 105 | % | 70-135 | 12.04.19 12.00 | |
| o-Terphenyl | 84-15-1 | 117 | % | 70-135 | 12.04.19 12.00 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH03A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-004 | Date Collected: | 12.03.19 12.45 | Sample Depth: | 9.5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109451 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 12.04.19 13.16 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 12.04.19 13.16 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 12.04.19 13.16 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 12.04.19 13.16 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 12.04.19 13.16 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 12.04.19 13.16 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 12.04.19 13.16 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 99 | % | 70-130 | 12.04.19 13.16 | |
| 1,4-Difluorobenzene | 540-36-3 | 101 | % | 70-130 | 12.04.19 13.16 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH04** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-005 | Date Collected: | 12.03.19 12.50 | Sample Depth: | 1 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109449 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.88 | 9.88 | mg/kg | 12.04.19 13.31 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109448 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 12.04.19 12.19 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 12.04.19 12.19 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 12.04.19 12.19 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 12.04.19 12.19 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 12.04.19 12.19 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 106 | % | 70-135 | 12.04.19 12.19 | |
| o-Terphenyl | 84-15-1 | 115 | % | 70-135 | 12.04.19 12.19 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH04** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-005 | Date Collected: | 12.03.19 12.50 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109451 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.33 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.33 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.33 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 12.04.19 13.33 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.33 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.33 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.33 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 101 | % | 70-130 | 12.04.19 13.33 | |
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 12.04.19 13.33 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH04A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-006 | Date Collected: | 12.03.19 13.30 | Sample Depth: | 9 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109449 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.82 | 9.82 | mg/kg | 12.04.19 13.49 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109448 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 12.04.19 12.19 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 12.04.19 12.19 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 12.04.19 12.19 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 12.04.19 12.19 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 12.04.19 12.19 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 105 | % | 70-135 | 12.04.19 12.19 | |
| o-Terphenyl | 84-15-1 | 118 | % | 70-135 | 12.04.19 12.19 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH04A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-006 | Date Collected: | 12.03.19 13.30 | Sample Depth: | 9 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109451 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.51 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.51 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.51 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 12.04.19 13.51 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.51 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.51 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.51 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 103 | % | 70-130 | 12.04.19 13.51 | |
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 12.04.19 13.51 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

Sample Id: **BH05** Matrix: Soil Date Received:12.04.19 08.45
Lab Sample Id: 644967-007 Date Collected: 12.03.19 13.35 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: MAB % Moisture:
Analyst: MAB Date Prep: 12.04.19 11.00 Basis: Wet Weight
Seq Number: 3109449

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <10.0 | 10.0 | mg/kg | 12.04.19 13.56 | U | 1 |

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
Tech: DTH % Moisture:
Analyst: DTH Date Prep: 12.04.19 11.00 Basis: Wet Weight
Seq Number: 3109448

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 12.04.19 12.39 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.2 | 50.2 | mg/kg | 12.04.19 12.39 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 12.04.19 12.39 | U | 1 |
| Total GRO-DRO | PHC628 | <50.2 | 50.2 | mg/kg | 12.04.19 12.39 | U | 1 |
| Total TPH | PHC635 | <50.2 | 50.2 | mg/kg | 12.04.19 12.39 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 105 | % | 70-135 | 12.04.19 12.39 | |
| o-Terphenyl | 84-15-1 | 113 | % | 70-135 | 12.04.19 12.39 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH05** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-007 | Date Collected: | 12.03.19 13.35 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109451 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 12.04.19 14.08 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 12.04.19 14.08 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 12.04.19 14.08 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 12.04.19 14.08 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 12.04.19 14.08 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 12.04.19 14.08 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 12.04.19 14.08 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 103 | % | 70-130 | 12.04.19 14.08 | |
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 12.04.19 14.08 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH05A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-008 | Date Collected: | 12.03.19 13.55 | Sample Depth: | 9 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109449 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <10.0 | 10.0 | mg/kg | 12.04.19 14.02 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109448 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 12.04.19 12.39 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.2 | 50.2 | mg/kg | 12.04.19 12.39 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 12.04.19 12.39 | U | 1 |
| Total GRO-DRO | PHC628 | <50.2 | 50.2 | mg/kg | 12.04.19 12.39 | U | 1 |
| Total TPH | PHC635 | <50.2 | 50.2 | mg/kg | 12.04.19 12.39 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 106 | % | 70-135 | 12.04.19 12.39 | |
| o-Terphenyl | 84-15-1 | 116 | % | 70-135 | 12.04.19 12.39 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH05A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-008 | Date Collected: | 12.03.19 13.55 | Sample Depth: | 9 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109451 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00198 | 0.00198 | mg/kg | 12.04.19 14.25 | U | 1 |
| Toluene | 108-88-3 | <0.00198 | 0.00198 | mg/kg | 12.04.19 14.25 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00198 | 0.00198 | mg/kg | 12.04.19 14.25 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00397 | 0.00397 | mg/kg | 12.04.19 14.25 | U | 1 |
| o-Xylene | 95-47-6 | <0.00198 | 0.00198 | mg/kg | 12.04.19 14.25 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00198 | 0.00198 | mg/kg | 12.04.19 14.25 | U | 1 |
| Total BTEX | | <0.00198 | 0.00198 | mg/kg | 12.04.19 14.25 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 103 | % | 70-130 | 12.04.19 14.25 | |
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 12.04.19 14.25 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH06** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-009 | Date Collected: | 12.03.19 14.00 | Sample Depth: | 1 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109449 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.88 | 9.88 | mg/kg | 12.04.19 14.08 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109448 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 12.04.19 12.59 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.2 | 50.2 | mg/kg | 12.04.19 12.59 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 12.04.19 12.59 | U | 1 |
| Total GRO-DRO | PHC628 | <50.2 | 50.2 | mg/kg | 12.04.19 12.59 | U | 1 |
| Total TPH | PHC635 | <50.2 | 50.2 | mg/kg | 12.04.19 12.59 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 102 | % | 70-135 | 12.04.19 12.59 | |
| o-Terphenyl | 84-15-1 | 110 | % | 70-135 | 12.04.19 12.59 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH06** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-009 | Date Collected: | 12.03.19 14.00 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109451 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.04.19 14.43 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.04.19 14.43 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.04.19 14.43 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00400 | 0.00400 | mg/kg | 12.04.19 14.43 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.04.19 14.43 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.04.19 14.43 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.04.19 14.43 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 99 | % | 70-130 | 12.04.19 14.43 | |
| 4-Bromofluorobenzene | 460-00-4 | 98 | % | 70-130 | 12.04.19 14.43 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH06A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-010 | Date Collected: | 12.03.19 14.45 | Sample Depth: | 9 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109449 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **94.5** | 9.94 | mg/kg | 12.04.19 14.27 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109448 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 12.04.19 12.59 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 12.04.19 12.59 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 12.04.19 12.59 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 12.04.19 12.59 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 12.04.19 12.59 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 101 | % | 70-135 | 12.04.19 12.59 | |
| o-Terphenyl | 84-15-1 | 112 | % | 70-135 | 12.04.19 12.59 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH06A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-010 | Date Collected: | 12.03.19 14.45 | Sample Depth: | 9 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109451 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 12.04.19 15.00 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 12.04.19 15.00 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 12.04.19 15.00 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 12.04.19 15.00 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 12.04.19 15.00 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 12.04.19 15.00 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 12.04.19 15.00 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 99 | % | 70-130 | 12.04.19 15.00 | |
| 1,4-Difluorobenzene | 540-36-3 | 99 | % | 70-130 | 12.04.19 15.00 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

Sample Id: **BH07** Matrix: Soil Date Received:12.04.19 08.45
Lab Sample Id: 644967-011 Date Collected: 12.03.19 15.10 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: MAB % Moisture:
Analyst: MAB Date Prep: 12.04.19 11.00 Basis: Wet Weight
Seq Number: 3109449

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **101** | 10.1 | mg/kg | 12.04.19 14.33 | | 1 |

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
Tech: DTH % Moisture:
Analyst: DTH Date Prep: 12.04.19 11.00 Basis: Wet Weight
Seq Number: 3109448

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 12.04.19 13.18 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 12.04.19 13.18 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 12.04.19 13.18 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 12.04.19 13.18 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 12.04.19 13.18 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 109 | % | 70-135 | 12.04.19 13.18 | |
| o-Terphenyl | 84-15-1 | 119 | % | 70-135 | 12.04.19 13.18 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH07** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-011 | Date Collected: | 12.03.19 15.10 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109451 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 12.04.19 17.40 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 12.04.19 17.40 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 12.04.19 17.40 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 12.04.19 17.40 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 12.04.19 17.40 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 12.04.19 17.40 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 12.04.19 17.40 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 105 | % | 70-130 | 12.04.19 17.40 | |
| 4-Bromofluorobenzene | 460-00-4 | 118 | % | 70-130 | 12.04.19 17.40 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH07A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-012 | Date Collected: | 12.03.19 15.40 | Sample Depth: | 9 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109449 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <10.0 | 10.0 | mg/kg | 12.04.19 14.40 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109448 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.8 | 49.8 | mg/kg | 12.04.19 13.38 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.8 | 49.8 | mg/kg | 12.04.19 13.38 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.8 | 49.8 | mg/kg | 12.04.19 13.38 | U | 1 |
| Total GRO-DRO | PHC628 | <49.8 | 49.8 | mg/kg | 12.04.19 13.38 | U | 1 |
| Total TPH | PHC635 | <49.8 | 49.8 | mg/kg | 12.04.19 13.38 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 100 | % | 70-135 | 12.04.19 13.38 | |
| o-Terphenyl | 84-15-1 | 109 | % | 70-135 | 12.04.19 13.38 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH07A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-012 | Date Collected: | 12.03.19 15.40 | Sample Depth: | 9 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109451 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 12.04.19 17.14 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 12.04.19 17.14 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 12.04.19 17.14 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 12.04.19 17.14 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 12.04.19 17.14 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 12.04.19 17.14 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 12.04.19 17.14 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 103 | % | 70-130 | 12.04.19 17.14 | |
| 1,4-Difluorobenzene | 540-36-3 | 101 | % | 70-130 | 12.04.19 17.14 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH09** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-013 | Date Collected: | 12.03.19 15.45 | Sample Depth: | 2 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109449 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **169** | 10.1 | mg/kg | 12.04.19 14.46 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109448 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.9 | 49.9 | mg/kg | 12.04.19 13.38 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.9 | 49.9 | mg/kg | 12.04.19 13.38 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.9 | 49.9 | mg/kg | 12.04.19 13.38 | U | 1 |
| Total GRO-DRO | PHC628 | <49.9 | 49.9 | mg/kg | 12.04.19 13.38 | U | 1 |
| Total TPH | PHC635 | <49.9 | 49.9 | mg/kg | 12.04.19 13.38 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 103 | % | 70-135 | 12.04.19 13.38 | |
| o-Terphenyl | 84-15-1 | 114 | % | 70-135 | 12.04.19 13.38 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH09** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-013 | Date Collected: | 12.03.19 15.45 | Sample Depth: | 2 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109451 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 12.04.19 18.15 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 12.04.19 18.15 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 12.04.19 18.15 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 12.04.19 18.15 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 12.04.19 18.15 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 12.04.19 18.15 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 12.04.19 18.15 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 97 | % | 70-130 | 12.04.19 18.15 | |
| 1,4-Difluorobenzene | 540-36-3 | 100 | % | 70-130 | 12.04.19 18.15 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH09A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-014 | Date Collected: | 12.03.19 15.47 | Sample Depth: | 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109449 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **24.2** | 9.92 | mg/kg | 12.04.19 15.05 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109448 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 12.04.19 13.58 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 12.04.19 13.58 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 12.04.19 13.58 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 12.04.19 13.58 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 12.04.19 13.58 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 101 | % | 70-135 | 12.04.19 13.58 | |
| o-Terphenyl | 84-15-1 | 110 | % | 70-135 | 12.04.19 13.58 | |

# Certificate of Analytical Results 644967

## LT Environmental, Inc., Arvada, CO

RDU 574

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH09A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644967-014 | Date Collected: | 12.03.19 15.47 | Sample Depth: | 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109451 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 12.04.19 18.32 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 12.04.19 18.32 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 12.04.19 18.32 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 12.04.19 18.32 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 12.04.19 18.32 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 12.04.19 18.32 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 12.04.19 18.32 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 95 | % | 70-130 | 12.04.19 18.32 | |
| 1,4-Difluorobenzene | 540-36-3 | 99 | % | 70-130 | 12.04.19 18.32 | |

# 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 644967

## LT Environmental, Inc.

RDU 574

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109449 — Matrix: Solid — Date Prep: 12.04.19
MB Sample Id: 7691687-1-BLK — LCS Sample Id: 7691687-1-BKS — LCSD Sample Id: 7691687-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <10.0 | 250 | 256 | 102 | 253 | 101 | 90-110 | 1 | 20 | mg/kg | 12.04.19 12:28 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109449 — Matrix: Soil — Date Prep: 12.04.19
Parent Sample Id: 644967-009 — MS Sample Id: 644967-009 S — MSD Sample Id: 644967-009 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 6.69 | 200 | 215 | 104 | 213 | 104 | 90-110 | 1 | 20 | mg/kg | 12.04.19 14:15 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109449 — Matrix: Soil — Date Prep: 12.04.19
Parent Sample Id: 645029-004 — MS Sample Id: 645029-004 S — MSD Sample Id: 645029-004 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 61.6 | 200 | 271 | 105 | 273 | 106 | 90-110 | 1 | 20 | mg/kg | 12.04.19 12:47 | |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3109448 — Matrix: Solid — Date Prep: 12.04.19
MB Sample Id: 7691706-1-BLK — LCS Sample Id: 7691706-1-BKS — LCSD Sample Id: 7691706-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <50.0 | 1000 | 914 | 91 | 890 | 89 | 70-135 | 3 | 35 | mg/kg | 12.04.19 09:53 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 1030 | 103 | 1090 | 109 | 70-135 | 6 | 35 | mg/kg | 12.04.19 09:53 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 104 | | 120 | | 123 | | 70-135 | % | 12.04.19 09:53 |
| o-Terphenyl | 115 | | 118 | | 126 | | 70-135 | % | 12.04.19 09:53 |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3109448 — Matrix: Solid — Date Prep: 12.04.19
MB Sample Id: 7691706-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 12.04.19 09:33 | |

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 644967



## LT Environmental, Inc.

RDU 574

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3109448 — Matrix: Soil — Date Prep: 12.04.19
Parent Sample Id: 644967-001 — MS Sample Id: 644967-001 S — MSD Sample Id: 644967-001 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) | <50.2 | 1000 | 925 | 93 | 893 | 90 | 70-135 | 4 | 35 | mg/kg | 12.04.19 11:20 | |
| Diesel Range Organics (DRO) | <50.2 | 1000 | 1140 | 114 | 1020 | 103 | 70-135 | 11 | 35 | mg/kg | 12.04.19 11:20 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 126 | | 122 | | 70-135 | % | 12.04.19 11:20 |
| o-Terphenyl | 130 | | 121 | | 70-135 | % | 12.04.19 11:20 |

**Analytical Method:** BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3109451 — Matrix: Solid — Date Prep: 12.04.19
MB Sample Id: 7691693-1-BLK — LCS Sample Id: 7691693-1-BKS — LCSD Sample Id: 7691693-1-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 | 0.106 | 106 | 0.0940 | 94 | 70-130 | 12 | 35 | mg/kg | 12.04.19 10:40 | |
| Toluene | <0.00200 | 0.100 | 0.106 | 106 | 0.0922 | 92 | 70-130 | 14 | 35 | mg/kg | 12.04.19 10:40 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.104 | 104 | 0.0900 | 90 | 71-129 | 14 | 35 | mg/kg | 12.04.19 10:40 | |
| m,p-Xylenes | <0.000754 | 0.200 | 0.216 | 108 | 0.185 | 93 | 70-135 | 15 | 35 | mg/kg | 12.04.19 10:40 | |
| o-Xylene | <0.00200 | 0.100 | 0.104 | 104 | 0.0896 | 90 | 71-133 | 15 | 35 | mg/kg | 12.04.19 10:40 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 101 | | 101 | | 99 | | 70-130 | % | 12.04.19 10:40 |
| 4-Bromofluorobenzene | 95 | | 97 | | 97 | | 70-130 | % | 12.04.19 10:40 |

**Analytical Method:** BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3109451 — Matrix: Soil — Date Prep: 12.04.19
Parent Sample Id: 644967-001 — MS Sample Id: 644967-001 S — MSD Sample Id: 644967-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00198 | 0.0992 | 0.0911 | 92 | 0.0851 | 86 | 70-130 | 7 | 35 | mg/kg | 12.04.19 11:14 | |
| Toluene | <0.00198 | 0.0992 | 0.0876 | 88 | 0.0825 | 83 | 70-130 | 6 | 35 | mg/kg | 12.04.19 11:14 | |
| Ethylbenzene | 0.000640 | 0.0992 | 0.0827 | 83 | 0.0782 | 78 | 71-129 | 6 | 35 | mg/kg | 12.04.19 11:14 | |
| m,p-Xylenes | <0.000748 | 0.198 | 0.170 | 86 | 0.161 | 81 | 70-135 | 5 | 35 | mg/kg | 12.04.19 11:14 | |
| o-Xylene | 0.000950 | 0.0992 | 0.0825 | 82 | 0.0783 | 78 | 71-133 | 5 | 35 | mg/kg | 12.04.19 11:14 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 102 | | 100 | | 70-130 | % | 12.04.19 11:14 |
| 4-Bromofluorobenzene | 100 | | 96 | | 70-130 | % | 12.04.19 11:14 |

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

# Chain of Custody

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 Crasbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701

Work Order No: 644967

www.xenco.com Page 1 of 2

| | | | |
|---|---|---|---|
| Project Manager: | Chris McKisson | Bill to: (if different) | Chris McKisson |
| Company Name: | LT Environmental | Company Name: | LT Environmental |
| Address: | 820 Megan Ave, Unit B | Address: | |
| City, State ZIP: | Rifle CO 81650 | City, State ZIP: | |
| Phone: | 970 285 9985 | Email: | cmckisson@ltenv.com+abyers@ltenv.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | RDU 57 | Turn Around | |
| Project Number: | 034819059 | Routine ☐ | |
| Project Location | Rural Eddy County | Rush: 24 HR | |
| Sampler's Name: | Anna Byers | Due Date: | |
| PO #: | Not Assigned | Quote #: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Temperature (°C): | 1.2 | Thermometer ID | TNM007 |
| Received Intact: | (Yes) No | | |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | 17 |

| Lab ID | Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|---|
| | BH02 | S | 12/3/19 | 1033 | 1' | 1 | | | |
| | BH02A | | | 1105 | 8' | 1 | | | |
| | BH03 | | | 1225 | 5.5' | 1 | | | |
| | BH03A | | | 1245 | 9.5' | 1 | | | |
| | BH04 | | | 1250 | 1' | 1 | | | |
| | BH04A | | | 1330 | 9' | 1 | | | |
| | BH05 | | | 1335 | 1' | 1 | | | |
| | BH05A | | | 1355 | 9' | 1 | | | |
| | BH06 | | | 1400 | 1' | 1 | | | |
| | BH06A | | | 1445 | 9' | 1 | | | |

**ANALYSIS REQUEST**

**Preservative Codes**

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

**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 | Anna Byers | | 12-4-2019 | 2 | | Corbin | 12/4/19 08:45 |
| 3 | | | | 4 | | | |
| 5 | | | | 6 | | | |

Revised Date 022619 Rev. 2019.1

XENCO LABORATORIES

# Chain of Custody

Work Order No: _____

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 Craslbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701

www.xenco.com Page 2 of 2

| | | | |
|---|---|---|---|
| Project Manager: | Chris McKisson | Bill to: (if different) | Chris McKisson |
| Company Name: | LT Environmental | Company Name: | LT Environmental |
| Address: | 820 Megan Ave, Unit B | Address: | |
| City, State ZIP: | Rifle CO 81650 | City, State ZIP: | |
| Phone: | 970 285 9985 | Email: | cmckisson@ltenv.com & abyers@ltenv.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | RDU 57 | Turn Around | |
| Project Number: | 034819059 | Routine ☐ | |
| Project Location | Rural Eddy County | Rush: 24 HR | |
| Sampler's Name: | Anna Byers | Due Date: | |
| PO #: | N/A | Quote #: | |

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

| Lab ID | Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | Pres. Code | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|---|---|
| | BH07 | S | 12/3/19 | 1510 | 1' | 1 | | X | X | X |
| | BH07A | ↓ | ↓ | 1540 | 9' | 1 | | | | |
| | BH09 | | | 1545 | 2' | 1 | | | | |
| | BH09A | | | 1547 | 3' | 1 | | | | |

**ANALYSIS REQUEST**

**Preservative Codes**

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

**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 |
|---|---|---|---|---|---|
| Anna Byers | | 12-4-2019 | 2 | | 12/4/19 08:29 |
| | | | 4 | | |
| | | | 6 | | |

Revised Date 022619 Rev. 2019.1

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 12/04/2019 08:45:00 AM

**Work Order #:** 644967

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

**Temperature Measuring device used : T NM 007**

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | 1.2 |
| #2 *Shipping container in good condition? | **Yes** |
| #3 *Samples received on ice? | **No** |
| #4 *Custody Seals intact on shipping container/ cooler? | **No** |
| #5 Custody Seals intact on sample bottles? | **No** |
| #6*Custody Seals Signed and dated? | **Yes** |
| #7 *Chain of Custody present? | **Yes** |
| #8 Any missing/extra samples? | **Yes** |
| #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:** Martha Castro Date: 12/04/2019

**Checklist reviewed by:** Jessica Kramer Date: 12/05/2019

# Analytical Report 644974

## for

## LT Environmental, Inc.

**Project Manager: Chris McKisson**

**RDU 57**

**034819059**

**05-DEC-19**

Collected By: Client


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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

05-DEC-19

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

Reference: XENCO Report No(s): **644974**
**RDU 57**
Project Address: Rural Eddy County

**Chris McKisson**:

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) 644974. 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. 644974 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 644974

## LT Environmental, Inc., Arvada, CO

RDU 57

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| BH01 | S | 12-03-19 09:45 | 3 ft | 644974-001 |
| BH01A | S | 12-03-19 11:45 | 12 ft | 644974-002 |

# CASE NARRATIVE

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

***Project Name: RDU 57***

Project ID: *034819059*
Work Order Number(s): *644974*

Report Date: *05-DEC-19*
Date Received: *12/04/2019*

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3109448 TPH by SW8015 Mod
Surrogate 1-Chlorooctane, Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 644974-001.

Batch: LBA-3109451 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

# Certificate of Analysis Summary 644974

## LT Environmental, Inc., Arvada, CO

## Project Name: RDU 57

**Project Id:** 034819059
**Contact:** Chris McKisson
**Project Location:** Rural Eddy County

**Date Received in Lab:** Wed Dec-04-19 08:45 am
**Report Date:** 05-DEC-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 644974-001 | | 644974-002 | | | | | |
| | ***Field Id:*** | BH01 | | BH01A | | | | | |
| | ***Depth:*** | 3- ft | | 12- ft | | | | | |
| | ***Matrix:*** | SOIL | | SOIL | | | | | |
| | ***Sampled:*** | Dec-03-19 09:45 | | Dec-03-19 11:45 | | | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Dec-04-19 10:00 | | Dec-04-19 10:00 | | | | | |
| | ***Analyzed:*** | Dec-04-19 20:17 | | Dec-04-19 19:59 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Benzene | | <0.200 | 0.200 | <0.00199 | 0.00199 | | | | |
| Toluene | | 0.829 | 0.200 | <0.00199 | 0.00199 | | | | |
| Ethylbenzene | | 8.99 | 0.200 | 0.00404 | 0.00199 | | | | |
| m,p-Xylenes | | 3.16 | 0.401 | <0.00398 | 0.00398 | | | | |
| o-Xylene | | 10.8 | 0.200 | 0.00525 | 0.00199 | | | | |
| Total Xylenes | | 14.0 | 0.200 | 0.00525 | 0.00199 | | | | |
| Total BTEX | | 23.8 | 0.200 | 0.00929 | 0.00199 | | | | |
| **Chloride by EPA 300** | ***Extracted:*** | Dec-04-19 11:00 | | Dec-04-19 11:00 | | | | | |
| | ***Analyzed:*** | Dec-04-19 15:11 | | Dec-04-19 15:17 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Chloride | | 18.5 | 9.96 | 363 | 99.6 | | | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | Dec-04-19 11:00 | | Dec-04-19 11:00 | | | | | |
| | ***Analyzed:*** | Dec-04-19 13:58 | | Dec-04-19 14:18 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Gasoline Range Hydrocarbons (GRO) | | 2350 | 250 | <50.0 | 50.0 | | | | |
| Diesel Range Organics (DRO) | | 11600 | 250 | 250 | 50.0 | | | | |
| Motor Oil Range Hydrocarbons (MRO) | | 967 | 250 | <50.0 | 50.0 | | | | |
| Total GRO-DRO | | 14000 | 250 | 250 | 50.0 | | | | |
| Total TPH | | 14900 | 250 | 250 | 50.0 | | | | |



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

Jessica Kramer
Project Assistant

# Certificate of Analytical Results 644974

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH01** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644974-001 | Date Collected: | 12.03.19 09.45 | Sample Depth: | 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109449 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **18.5** | 9.96 | mg/kg | 12.04.19 15.11 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109448 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **2350** | 250 | mg/kg | 12.04.19 13.58 | | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **11600** | 250 | mg/kg | 12.04.19 13.58 | | 5 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **967** | 250 | mg/kg | 12.04.19 13.58 | | 5 |
| **Total GRO-DRO** | PHC628 | **14000** | 250 | mg/kg | 12.04.19 13.58 | | 5 |
| **Total TPH** | PHC635 | **14900** | 250 | mg/kg | 12.04.19 13.58 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 143 | % | 70-135 | 12.04.19 13.58 | ** |
| o-Terphenyl | 84-15-1 | 137 | % | 70-135 | 12.04.19 13.58 | ** |

# Certificate of Analytical Results 644974

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH01** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644974-001 | Date Collected: | 12.03.19 09.45 | Sample Depth: | 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109451 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.200 | 0.200 | mg/kg | 12.04.19 20.17 | U | 100 |
| **Toluene** | 108-88-3 | **0.829** | 0.200 | mg/kg | 12.04.19 20.17 | | 100 |
| **Ethylbenzene** | 100-41-4 | **8.99** | 0.200 | mg/kg | 12.04.19 20.17 | | 100 |
| **m,p-Xylenes** | 179601-23-1 | **3.16** | 0.401 | mg/kg | 12.04.19 20.17 | | 100 |
| **o-Xylene** | 95-47-6 | **10.8** | 0.200 | mg/kg | 12.04.19 20.17 | | 100 |
| **Total Xylenes** | 1330-20-7 | **14.0** | 0.200 | mg/kg | 12.04.19 20.17 | | 100 |
| **Total BTEX** | | **23.8** | 0.200 | mg/kg | 12.04.19 20.17 | | 100 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 113 | % | 70-130 | 12.04.19 20.17 | |
| 1,4-Difluorobenzene | 540-36-3 | 94 | % | 70-130 | 12.04.19 20.17 | |

# Certificate of Analytical Results 644974

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH01A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644974-002 | Date Collected: | 12.03.19 11.45 | Sample Depth: | 12 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109449 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **363** | 99.6 | mg/kg | 12.04.19 15.17 | | 10 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109448 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 12.04.19 14.18 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **250** | 50.0 | mg/kg | 12.04.19 14.18 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 12.04.19 14.18 | U | 1 |
| **Total GRO-DRO** | PHC628 | **250** | 50.0 | mg/kg | 12.04.19 14.18 | | 1 |
| **Total TPH** | PHC635 | **250** | 50.0 | mg/kg | 12.04.19 14.18 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 104 | % | 70-135 | 12.04.19 14.18 | |
| o-Terphenyl | 84-15-1 | 116 | % | 70-135 | 12.04.19 14.18 | |

# Certificate of Analytical Results 644974

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH01A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644974-002 | Date Collected: | 12.03.19 11.45 | Sample Depth: | 12 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109451 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 12.04.19 19.59 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 12.04.19 19.59 | U | 1 |
| **Ethylbenzene** | 100-41-4 | **0.00404** | 0.00199 | mg/kg | 12.04.19 19.59 | | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 12.04.19 19.59 | U | 1 |
| **o-Xylene** | 95-47-6 | **0.00525** | 0.00199 | mg/kg | 12.04.19 19.59 | | 1 |
| **Total Xylenes** | 1330-20-7 | **0.00525** | 0.00199 | mg/kg | 12.04.19 19.59 | | 1 |
| **Total BTEX** | | **0.00929** | 0.00199 | mg/kg | 12.04.19 19.59 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 99 | % | 70-130 | 12.04.19 19.59 | |
| 4-Bromofluorobenzene | 460-00-4 | 103 | % | 70-130 | 12.04.19 19.59 | |

# 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 644974



## LT Environmental, Inc.

RDU 57

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109449 — Matrix: Solid — Date Prep: 12.04.19
MB Sample Id: 7691687-1-BLK — LCS Sample Id: 7691687-1-BKS — LCSD Sample Id: 7691687-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <10.0 | 250 | 256 | 102 | 253 | 101 | 90-110 | 1 | 20 | mg/kg | 12.04.19 12:28 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109449 — Matrix: Soil — Date Prep: 12.04.19
Parent Sample Id: 644967-009 — MS Sample Id: 644967-009 S — MSD Sample Id: 644967-009 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 6.69 | 200 | 215 | 104 | 213 | 104 | 90-110 | 1 | 20 | mg/kg | 12.04.19 14:15 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109449 — Matrix: Soil — Date Prep: 12.04.19
Parent Sample Id: 645029-004 — MS Sample Id: 645029-004 S — MSD Sample Id: 645029-004 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 61.6 | 200 | 271 | 105 | 273 | 106 | 90-110 | 1 | 20 | mg/kg | 12.04.19 12:47 | |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3109448 — Matrix: Solid — Date Prep: 12.04.19
MB Sample Id: 7691706-1-BLK — LCS Sample Id: 7691706-1-BKS — LCSD Sample Id: 7691706-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <50.0 | 1000 | 914 | 91 | 890 | 89 | 70-135 | 3 | 35 | mg/kg | 12.04.19 09:53 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 1030 | 103 | 1090 | 109 | 70-135 | 6 | 35 | mg/kg | 12.04.19 09:53 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 104 | | 120 | | 123 | | 70-135 | % | 12.04.19 09:53 |
| o-Terphenyl | 115 | | 118 | | 126 | | 70-135 | % | 12.04.19 09:53 |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3109448 — Matrix: Solid — Date Prep: 12.04.19
MB Sample Id: 7691706-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 12.04.19 09:33 | |

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 644974



## LT Environmental, Inc.

RDU 57

**Analytical Method:** TPH by SW8015 Mod | Prep Method: SW8015P
Seq Number: 3109448 | Matrix: Soil | Date Prep: 12.04.19
Parent Sample Id: 644967-001 | MS Sample Id: 644967-001 S | MSD Sample Id: 644967-001 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) | <50.2 | 1000 | 925 | 93 | 893 | 90 | 70-135 | 4 | 35 | mg/kg | 12.04.19 11:20 | |
| Diesel Range Organics (DRO) | <50.2 | 1000 | 1140 | 114 | 1020 | 103 | 70-135 | 11 | 35 | mg/kg | 12.04.19 11:20 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 126 | | 122 | | 70-135 | % | 12.04.19 11:20 |
| o-Terphenyl | 130 | | 121 | | 70-135 | % | 12.04.19 11:20 |

**Analytical Method:** BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3109451 | Matrix: Solid | Date Prep: 12.04.19
MB Sample Id: 7691693-1-BLK | LCS Sample Id: 7691693-1-BKS | LCSD Sample Id: 7691693-1-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 | 0.106 | 106 | 0.0940 | 94 | 70-130 | 12 | 35 | mg/kg | 12.04.19 10:40 | |
| Toluene | <0.00200 | 0.100 | 0.106 | 106 | 0.0922 | 92 | 70-130 | 14 | 35 | mg/kg | 12.04.19 10:40 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.104 | 104 | 0.0900 | 90 | 71-129 | 14 | 35 | mg/kg | 12.04.19 10:40 | |
| m,p-Xylenes | <0.000754 | 0.200 | 0.216 | 108 | 0.185 | 93 | 70-135 | 15 | 35 | mg/kg | 12.04.19 10:40 | |
| o-Xylene | <0.00200 | 0.100 | 0.104 | 104 | 0.0896 | 90 | 71-133 | 15 | 35 | mg/kg | 12.04.19 10:40 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 101 | | 101 | | 99 | | 70-130 | % | 12.04.19 10:40 |
| 4-Bromofluorobenzene | 95 | | 97 | | 97 | | 70-130 | % | 12.04.19 10:40 |

**Analytical Method:** BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3109451 | Matrix: Soil | Date Prep: 12.04.19
Parent Sample Id: 644967-001 | MS Sample Id: 644967-001 S | MSD Sample Id: 644967-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00198 | 0.0992 | 0.0911 | 92 | 0.0851 | 86 | 70-130 | 7 | 35 | mg/kg | 12.04.19 11:14 | |
| Toluene | <0.00198 | 0.0992 | 0.0876 | 88 | 0.0825 | 83 | 70-130 | 6 | 35 | mg/kg | 12.04.19 11:14 | |
| Ethylbenzene | 0.000640 | 0.0992 | 0.0827 | 83 | 0.0782 | 78 | 71-129 | 6 | 35 | mg/kg | 12.04.19 11:14 | |
| m,p-Xylenes | <0.000748 | 0.198 | 0.170 | 86 | 0.161 | 81 | 70-135 | 5 | 35 | mg/kg | 12.04.19 11:14 | |
| o-Xylene | 0.000950 | 0.0992 | 0.0825 | 82 | 0.0783 | 78 | 71-133 | 5 | 35 | mg/kg | 12.04.19 11:14 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 102 | | 100 | | 70-130 | % | 12.04.19 11:14 |
| 4-Bromofluorobenzene | 100 | | 96 | | 70-130 | % | 12.04.19 11:14 |

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



Final 1.000

# Chain of Custody

Work Order No: 644974

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 Crasbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701
www.xenco.com



| | | | |
|---|---|---|---|
| Project Manager: | Chris McKisson | Bill to: (if different) | ~~Kyle Cox~~ Chris McKisson |
| Company Name: | LT Environmental | Company Name: | LT Environmental |
| Address: | 820 Megan Ave, Unit B | Address: | |
| City, State ZIP: | Rifle CO 81650 | City, State ZIP: | |
| Phone: | 970 285 9985 | Email: | cmckisson@ltenv.com & abyers@ltenv.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | RDU 57 | Turn Around | |
| Project Number: | 034819059 | Routine ☐ | |
| Project Location | Rural Eddy County | Rush: 24 HR | |
| Sampler's Name: | Anna Byers | Due Date: | |
| PO #: | N/A | Quote #: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Temperature (°C): | 1.2 | Thermometer ID | TNM007 |
| Received Intact: | (Yes) No | | |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | 2 |

**Preservative Codes**

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

| Lab ID | Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | BH01 | S | 12/3/19 | 0940 | 3' | 1 | x | x | x | |
| | BH01A | S | 12/3/19 | 1145 | 12' | 1 | x | x | x | |

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr 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 |
|---|---|---|---|---|---|
| Anna Byers | | 12-4-2019 | 2 | | 12/4/19 08:45 |
| | | | 4 | | |
| | | | 6 | | |

Revised Date 022619 Rev. 2019.1

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 12/04/2019 08:45:00 AM

**Work Order #:** 644974

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

**Temperature Measuring device used : TN M 0074**

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | 1.2 |
| #2 *Shipping container in good condition? | **Yes** |
| #3 *Samples received on ice? | **Yes** |
| #4 *Custody Seals intact on shipping container/ cooler? | **No** |
| #5 Custody Seals intact on sample bottles? | **No** |
| #6*Custody Seals Signed and dated? | **No** |
| #7 *Chain of Custody present? | **Yes** |
| #8 Any missing/extra samples? | **Yes** |
| #9 Chain of Custody signed when relinquished/ received? | **Yes** |
| #10 Chain of Custody agrees with sample labels/matrix? | **Yes** |
| #11 Container label(s) legible and intact? | **Yes** |
| #12 Samples in proper container/ bottle? | **Yes** |
| #13 Samples properly preserved? | **Yes** |
| #14 Sample container(s) intact? | **Yes** |
| #15 Sufficient sample amount for indicated test(s)? | **Yes** |
| #16 All samples received within hold time? | **Yes** |
| #17 Subcontract of sample(s)? | **Yes** |
| #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:** Martha Castro Date: 12/04/2019

**Checklist reviewed by:** Jessica Kramer Date: 12/05/2019

# Analytical Report 644977

## for

## LT Environmental, Inc.

**Project Manager: Chris McKisson**

**RDU 57**

**0648919059**

**05-DEC-19**

Collected By: Client


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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

05-DEC-19

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

Reference: XENCO Report No(s): **644977**
**RDU 57**
Project Address: Rural Eddy County

**Chris McKisson**:

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) 644977. 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. 644977 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

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

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

# Sample Cross Reference 644977

## LT Environmental, Inc., Arvada, CO

RDU 57

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| bh01b | S | 12-03-19 17:00 | 15 ft | 644977-001 |

# CASE NARRATIVE

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

***Project Name: RDU 57***

Project ID: *0648919059*
Work Order Number(s): *644977*

Report Date: *05-DEC-19*
Date Received: *12/04/2019*

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3109452 BTEX by EPA 8021B

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

# Certificate of Analysis Summary 644977

## LT Environmental, Inc., Arvada, CO

## Project Name: RDU 57

**Project Id:** 0648919059
**Contact:** Chris McKisson
**Project Location:** Rural Eddy County

**Date Received in Lab:** Wed Dec-04-19 08:45 am
**Report Date:** 05-DEC-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | |
|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 644977-001 | | | | | |
| | ***Field Id:*** | bh01b | | | | | |
| | ***Depth:*** | 15- ft | | | | | |
| | ***Matrix:*** | SOIL | | | | | |
| | ***Sampled:*** | Dec-03-19 17:00 | | | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Dec-04-19 10:00 | | | | | |
| | ***Analyzed:*** | Dec-04-19 13:00 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | | | | |
| Benzene | | <0.00200 | 0.00200 | | | | |
| Toluene | | <0.00200 | 0.00200 | | | | |
| Ethylbenzene | | <0.00200 | 0.00200 | | | | |
| m,p-Xylenes | | <0.00400 | 0.00400 | | | | |
| o-Xylene | | <0.00200 | 0.00200 | | | | |
| Xylenes, Total | | <0.00200 | 0.00200 | | | | |
| Total BTEX | | <0.00200 | 0.00200 | | | | |
| **Chloride by EPA 300** | ***Extracted:*** | Dec-04-19 11:00 | | | | | |
| | ***Analyzed:*** | Dec-04-19 15:24 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | | | | |
| Chloride | | 7380 | 499 | | | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | Dec-04-19 11:00 | | | | | |
| | ***Analyzed:*** | Dec-04-19 14:38 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | | | | |
| Gasoline Range Hydrocarbons (GRO) | | <50.1 | 50.1 | | | | |
| Diesel Range Organics (DRO) | | <50.1 | 50.1 | | | | |
| Motor Oil Range Hydrocarbons (MRO) | | <50.1 | 50.1 | | | | |
| Total GRO-DRO | | <50.1 | 50.1 | | | | |
| Total TPH | | <50.1 | 50.1 | | | | |





Jessica Kramer
Project Assistant

# Certificate of Analytical Results 644977

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **bh01b** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644977-001 | Date Collected: | 12.03.19 17.00 | Sample Depth: | 15 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109449 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **7380** | 499 | mg/kg | 12.04.19 15.24 | | 50 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109448 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 12.04.19 14.38 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 12.04.19 14.38 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 12.04.19 14.38 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 12.04.19 14.38 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 12.04.19 14.38 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 102 | % | 70-135 | 12.04.19 14.38 | |
| o-Terphenyl | 84-15-1 | 111 | % | 70-135 | 12.04.19 14.38 | |

# Certificate of Analytical Results 644977

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **bh01b** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644977-001 | Date Collected: | 12.03.19 17.00 | Sample Depth: | 15 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109452 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.00 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.00 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.00 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00400 | 0.00400 | mg/kg | 12.04.19 13.00 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.00 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.00 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.04.19 13.00 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 104 | % | 70-130 | 12.04.19 13.00 | |
| 4-Bromofluorobenzene | 460-00-4 | 123 | % | 70-130 | 12.04.19 13.00 | |

# Flagging Criteria

**X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

**B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

**D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

**E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

**F** RPD exceeded lab control limits.

**J** The target analyte was positively identified below the quantitation limit and above the detection limit.

**U** Analyte was not detected.

**L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

**H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

**K** Sample analyzed outside of recommended hold time.

**JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

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

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

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

+ NELAC certification not offered for this compound.

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

# QC Summary 644977



## LT Environmental, Inc.

RDU 57

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109449 — Matrix: Solid — Date Prep: 12.04.19
MB Sample Id: 7691687-1-BLK — LCS Sample Id: 7691687-1-BKS — LCSD Sample Id: 7691687-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <10.0 | 250 | 256 | 102 | 253 | 101 | 90-110 | 1 | 20 | mg/kg | 12.04.19 12:28 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109449 — Matrix: Soil — Date Prep: 12.04.19
Parent Sample Id: 644967-009 — MS Sample Id: 644967-009 S — MSD Sample Id: 644967-009 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 6.69 | 200 | 215 | 104 | 213 | 104 | 90-110 | 1 | 20 | mg/kg | 12.04.19 14:15 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109449 — Matrix: Soil — Date Prep: 12.04.19
Parent Sample Id: 645029-004 — MS Sample Id: 645029-004 S — MSD Sample Id: 645029-004 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 61.6 | 200 | 271 | 105 | 273 | 106 | 90-110 | 1 | 20 | mg/kg | 12.04.19 12:47 | |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3109448 — Matrix: Solid — Date Prep: 12.04.19
MB Sample Id: 7691706-1-BLK — LCS Sample Id: 7691706-1-BKS — LCSD Sample Id: 7691706-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <50.0 | 1000 | 914 | 91 | 890 | 89 | 70-135 | 3 | 35 | mg/kg | 12.04.19 09:53 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 1030 | 103 | 1090 | 109 | 70-135 | 6 | 35 | mg/kg | 12.04.19 09:53 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 104 | | 120 | | 123 | | 70-135 | % | 12.04.19 09:53 |
| o-Terphenyl | 115 | | 118 | | 126 | | 70-135 | % | 12.04.19 09:53 |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3109448 — Matrix: Solid — Date Prep: 12.04.19
MB Sample Id: 7691706-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 12.04.19 09:33 | |

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 644977



## LT Environmental, Inc.

RDU 57

**Analytical Method:** TPH by SW8015 Mod | Prep Method: SW8015P
Seq Number: 3109448 | Matrix: Soil | Date Prep: 12.04.19
Parent Sample Id: 644967-001 | MS Sample Id: 644967-001 S | MSD Sample Id: 644967-001 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) | <50.2 | 1000 | 925 | 93 | 893 | 90 | 70-135 | 4 | 35 | mg/kg | 12.04.19 11:20 | |
| Diesel Range Organics (DRO) | <50.2 | 1000 | 1140 | 114 | 1020 | 103 | 70-135 | 11 | 35 | mg/kg | 12.04.19 11:20 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 126 | | 122 | | 70-135 | % | 12.04.19 11:20 |
| o-Terphenyl | 130 | | 121 | | 70-135 | % | 12.04.19 11:20 |

**Analytical Method:** BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3109452 | Matrix: Solid | Date Prep: 12.04.19
MB Sample Id: 7691694-1-BLK | LCS Sample Id: 7691694-1-BKS | LCSD Sample Id: 7691694-1-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 | 0.0892 | 89 | 0.0958 | 96 | 70-130 | 7 | 35 | mg/kg | 12.04.19 10:39 | |
| Toluene | <0.00200 | 0.100 | 0.0913 | 91 | 0.0974 | 97 | 70-130 | 6 | 35 | mg/kg | 12.04.19 10:39 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0913 | 91 | 0.0970 | 97 | 71-129 | 6 | 35 | mg/kg | 12.04.19 10:39 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.194 | 97 | 0.205 | 103 | 70-135 | 6 | 35 | mg/kg | 12.04.19 10:39 | |
| o-Xylene | <0.00200 | 0.100 | 0.0970 | 97 | 0.103 | 103 | 71-133 | 6 | 35 | mg/kg | 12.04.19 10:39 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 97 | | 102 | | 102 | | 70-130 | % | 12.04.19 10:39 |
| 4-Bromofluorobenzene | 109 | | 115 | | 115 | | 70-130 | % | 12.04.19 10:39 |

**Analytical Method:** BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3109452 | Matrix: Soil | Date Prep: 12.04.19
Parent Sample Id: 644979-001 | MS Sample Id: 644979-001 S | MSD Sample Id: 644979-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | 0.100 | 0.0903 | 90 | 0.0737 | 74 | 70-130 | 20 | 35 | mg/kg | 12.04.19 11:18 | |
| Toluene | <0.00200 | 0.100 | 0.0910 | 91 | 0.0740 | 74 | 70-130 | 21 | 35 | mg/kg | 12.04.19 11:18 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0904 | 90 | 0.0720 | 72 | 71-129 | 23 | 35 | mg/kg | 12.04.19 11:18 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.193 | 97 | 0.154 | 77 | 70-135 | 22 | 35 | mg/kg | 12.04.19 11:18 | |
| o-Xylene | <0.00200 | 0.100 | 0.0963 | 96 | 0.0760 | 76 | 71-133 | 24 | 35 | mg/kg | 12.04.19 11:18 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 103 | | 105 | | 70-130 | % | 12.04.19 11:18 |
| 4-Bromofluorobenzene | 119 | | 118 | | 70-130 | % | 12.04.19 11:18 |

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

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

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

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



Final 1.000

# Chain of Custody

Work Order No: 644977

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 Craslbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701
www.xenco.com



| | | | |
|---|---|---|---|
| Project Manager: | Chris McKisson | Bill to: (if different) | Chris McKisson |
| Company Name: | LT Environmental | Company Name: | LT Environmental |
| Address: | 870 Megan Ave, Unit B | Address: | |
| City, State ZIP: | Rifle CO 81650 | City, State ZIP: | |
| Phone: | 970 285 9985 | Email: | cmckisson@ltenv.com tabyers@ltenv.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | RDU 57 | Turn Around | |
| Project Number: | 034819059 | Routine ☐ | |
| Project Location | Rural Eddy County | Rush: 24 HR | |
| Sampler's Name: | Anna Byers | Due Date: | |
| PO #: | N/A | Quote #: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Temperature (°C): | 1.2 | Thermometer ID | TNM007 |
| Received Intact: | (Yes) No | | |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | 1 |

| Lab ID | Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | Pres. Code | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|---|---|
| | BH01B | S | 12/3/19 | 1700 | 15' | 1 | | X | X | X |

**Preservative Codes**

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

**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 | Anna Byers | | 12-4-2019 | | | |
| 2 | | | | | Corbin | 12/4/19 08:45 |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 12/04/2019 08:45:00 AM

**Work Order #:** 644977

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

**Temperature Measuring device used : T NM 007**

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | 1.2 |
| #2 *Shipping container in good condition? | **Yes** |
| #3 *Samples received on ice? | **Yes** |
| #4 *Custody Seals intact on shipping container/ cooler? | **No** |
| #5 Custody Seals intact on sample bottles? | **No** |
| #6*Custody Seals Signed and dated? | **No** |
| #7 *Chain of Custody present? | **Yes** |
| #8 Any missing/extra samples? | **Yes** |
| #9 Chain of Custody signed when relinquished/ received? | **Yes** |
| #10 Chain of Custody agrees with sample labels/matrix? | **Yes** |
| #11 Container label(s) legible and intact? | **Yes** |
| #12 Samples in proper container/ bottle? | **Yes** |
| #13 Samples properly preserved? | **Yes** |
| #14 Sample container(s) intact? | **Yes** |
| #15 Sufficient sample amount for indicated test(s)? | **Yes** |
| #16 All samples received within hold time? | **Yes** |
| #17 Subcontract of sample(s)? | **Yes** |
| #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:** Martha Castro Date: 12/04/2019

**Checklist reviewed by:** Jessica Kramer Date: 12/05/2019

# Analytical Report 644979

## for

## LT Environmental, Inc.

**Project Manager: Chris McKisson**

**RDU 57**

**034819059**

**05-DEC-19**

Collected By: Client


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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

05-DEC-19

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

Reference: XENCO Report No(s): **644979**
**RDU 57**
Project Address: Rural Eddy County

**Chris McKisson**:

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) 644979. 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. 644979 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

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

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

# Sample Cross Reference 644979

## LT Environmental, Inc., Arvada, CO

RDU 57

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| BH08 | S | 12-03-19 15:55 | 7 ft | 644979-001 |
| BH08A | S | 12-03-19 16:05 | 9 ft | 644979-002 |

# CASE NARRATIVE

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

***Project Name: RDU 57***

Project ID: *034819059*
Work Order Number(s): *644979*

Report Date: *05-DEC-19*
Date Received: *12/04/2019*

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3109452 BTEX by EPA 8021B

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

# Certificate of Analysis Summary 644979

## LT Environmental, Inc., Arvada, CO

## Project Name: RDU 57

**Project Id:** 034819059
**Contact:** Chris McKisson
**Project Location:** Rural Eddy County

**Date Received in Lab:** Wed Dec-04-19 08:45 am
**Report Date:** 05-DEC-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 644979-001 | | 644979-002 | | | | | |
| | ***Field Id:*** | BH08 | | BH08A | | | | | |
| | ***Depth:*** | 7- ft | | 9- ft | | | | | |
| | ***Matrix:*** | SOIL | | SOIL | | | | | |
| | ***Sampled:*** | Dec-03-19 15:55 | | Dec-03-19 16:05 | | | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Dec-04-19 10:00 | | Dec-04-19 10:00 | | | | | |
| | ***Analyzed:*** | Dec-04-19 12:21 | | Dec-04-19 12:41 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Benzene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | | | | |
| Toluene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | | | | |
| Ethylbenzene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | | | | |
| m,p-Xylenes | | <0.00399 | 0.00399 | <0.00401 | 0.00401 | | | | |
| o-Xylene | | <0.00200 | 0.00200 | 0.00394 | 0.00200 | | | | |
| Xylenes, Total | | <0.00200 | 0.00200 | 0.00394 | 0.00200 | | | | |
| Total BTEX | | <0.00200 | 0.00200 | 0.00394 | 0.00200 | | | | |
| **Chloride by EPA 300** | ***Extracted:*** | Dec-04-19 13:00 | | Dec-04-19 13:00 | | | | | |
| | ***Analyzed:*** | Dec-04-19 16:28 | | Dec-04-19 16:45 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Chloride | | 10.5 | 10.0 | 526 | 99.4 | | | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | Dec-04-19 11:00 | | Dec-04-19 11:00 | | | | | |
| | ***Analyzed:*** | Dec-04-19 14:38 | | Dec-04-19 14:57 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Gasoline Range Hydrocarbons (GRO) | | <50.3 | 50.3 | <50.1 | 50.1 | | | | |
| Diesel Range Organics (DRO) | | <50.3 | 50.3 | <50.1 | 50.1 | | | | |
| Motor Oil Range Hydrocarbons (MRO) | | <50.3 | 50.3 | <50.1 | 50.1 | | | | |
| Total GRO-DRO | | <50.3 | 50.3 | <50.1 | 50.1 | | | | |
| Total TPH | | <50.3 | 50.3 | <50.1 | 50.1 | | | | |





Jessica Kramer
Project Assistant

# Certificate of Analytical Results 644979

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH08** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644979-001 | Date Collected: | 12.03.19 15.55 | Sample Depth: | 7 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3109466 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **10.5** | 10.0 | mg/kg | 12.04.19 16.28 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109448 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.3 | 50.3 | mg/kg | 12.04.19 14.38 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.3 | 50.3 | mg/kg | 12.04.19 14.38 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.3 | 50.3 | mg/kg | 12.04.19 14.38 | U | 1 |
| Total GRO-DRO | PHC628 | <50.3 | 50.3 | mg/kg | 12.04.19 14.38 | U | 1 |
| Total TPH | PHC635 | <50.3 | 50.3 | mg/kg | 12.04.19 14.38 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 102 | % | 70-135 | 12.04.19 14.38 | |
| o-Terphenyl | 84-15-1 | 114 | % | 70-135 | 12.04.19 14.38 | |

# Certificate of Analytical Results 644979

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH08** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644979-001 | Date Collected: | 12.03.19 15.55 | Sample Depth: | 7 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109452 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.21 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.21 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.21 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 12.04.19 12.21 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.21 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.21 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.21 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 114 | % | 70-130 | 12.04.19 12.21 | |
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 12.04.19 12.21 | |

# Certificate of Analytical Results 644979

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH08A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644979-002 | Date Collected: | 12.03.19 16.05 | Sample Depth: | 9 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3109466 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **526** | 99.4 | mg/kg | 12.04.19 16.45 | | 10 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109448 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 12.04.19 14.57 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 12.04.19 14.57 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 12.04.19 14.57 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 12.04.19 14.57 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 12.04.19 14.57 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 102 | % | 70-135 | 12.04.19 14.57 | |
| o-Terphenyl | 84-15-1 | 111 | % | 70-135 | 12.04.19 14.57 | |

# Certificate of Analytical Results 644979

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH08A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644979-002 | Date Collected: | 12.03.19 16.05 | Sample Depth: | 9 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109452 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.41 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.41 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.04.19 12.41 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 12.04.19 12.41 | U | 1 |
| **o-Xylene** | 95-47-6 | **0.00394** | 0.00200 | mg/kg | 12.04.19 12.41 | | 1 |
| **Xylenes, Total** | 1330-20-7 | **0.00394** | 0.00200 | mg/kg | 12.04.19 12.41 | | 1 |
| **Total BTEX** | | **0.00394** | 0.00200 | mg/kg | 12.04.19 12.41 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 105 | % | 70-130 | 12.04.19 12.41 | |
| 4-Bromofluorobenzene | 460-00-4 | 123 | % | 70-130 | 12.04.19 12.41 | |

# Flagging Criteria

**X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

**B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

**D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

**E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

**F** RPD exceeded lab control limits.

**J** The target analyte was positively identified below the quantitation limit and above the detection limit.

**U** Analyte was not detected.

**L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

**H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

**K** Sample analyzed outside of recommended hold time.

**JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

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

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

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

+ NELAC certification not offered for this compound.

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

# QC Summary 644979



## LT Environmental, Inc.

RDU 57

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109466 — Matrix: Solid — Date Prep: 12.04.19
MB Sample Id: 7691688-1-BLK — LCS Sample Id: 7691688-1-BKS — LCSD Sample Id: 7691688-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <10.0 | 250 | 262 | 105 | 266 | 106 | 90-110 | 2 | 20 | mg/kg | 12.04.19 15:56 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109466 — Matrix: Soil — Date Prep: 12.04.19
Parent Sample Id: 644979-001 — MS Sample Id: 644979-001 S — MSD Sample Id: 644979-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 10.5 | 202 | 219 | 103 | 217 | 103 | 90-110 | 1 | 20 | mg/kg | 12.04.19 16:34 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109466 — Matrix: Soil — Date Prep: 12.04.19
Parent Sample Id: 644985-005 — MS Sample Id: 644985-005 S — MSD Sample Id: 644985-005 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 942 | 198 | 1140 | 100 | 1160 | 109 | 90-110 | 2 | 20 | mg/kg | 12.04.19 17:57 | |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3109448 — Matrix: Solid — Date Prep: 12.04.19
MB Sample Id: 7691706-1-BLK — LCS Sample Id: 7691706-1-BKS — LCSD Sample Id: 7691706-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <50.0 | 1000 | 914 | 91 | 890 | 89 | 70-135 | 3 | 35 | mg/kg | 12.04.19 09:53 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 1030 | 103 | 1090 | 109 | 70-135 | 6 | 35 | mg/kg | 12.04.19 09:53 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 104 | | 120 | | 123 | | 70-135 | % | 12.04.19 09:53 |
| o-Terphenyl | 115 | | 118 | | 126 | | 70-135 | % | 12.04.19 09:53 |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3109448 — Matrix: Solid — Date Prep: 12.04.19
MB Sample Id: 7691706-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 12.04.19 09:33 | |

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 644979



## LT Environmental, Inc.

RDU 57

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3109448 Matrix: Soil Date Prep: 12.04.19
Parent Sample Id: 644967-001 MS Sample Id: 644967-001 S MSD Sample Id: 644967-001 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) | <50.2 | 1000 | 925 | 93 | 893 | 90 | 70-135 | 4 | 35 | mg/kg | 12.04.19 11:20 | |
| Diesel Range Organics (DRO) | <50.2 | 1000 | 1140 | 114 | 1020 | 103 | 70-135 | 11 | 35 | mg/kg | 12.04.19 11:20 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 126 | | 122 | | 70-135 | % | 12.04.19 11:20 |
| o-Terphenyl | 130 | | 121 | | 70-135 | % | 12.04.19 11:20 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3109452 Matrix: Solid Date Prep: 12.04.19
MB Sample Id: 7691694-1-BLK LCS Sample Id: 7691694-1-BKS LCSD Sample Id: 7691694-1-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 | 0.0892 | 89 | 0.0958 | 96 | 70-130 | 7 | 35 | mg/kg | 12.04.19 10:39 | |
| Toluene | <0.00200 | 0.100 | 0.0913 | 91 | 0.0974 | 97 | 70-130 | 6 | 35 | mg/kg | 12.04.19 10:39 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0913 | 91 | 0.0970 | 97 | 71-129 | 6 | 35 | mg/kg | 12.04.19 10:39 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.194 | 97 | 0.205 | 103 | 70-135 | 6 | 35 | mg/kg | 12.04.19 10:39 | |
| o-Xylene | <0.00200 | 0.100 | 0.0970 | 97 | 0.103 | 103 | 71-133 | 6 | 35 | mg/kg | 12.04.19 10:39 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 97 | | 102 | | 102 | | 70-130 | % | 12.04.19 10:39 |
| 4-Bromofluorobenzene | 109 | | 115 | | 115 | | 70-130 | % | 12.04.19 10:39 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3109452 Matrix: Soil Date Prep: 12.04.19
Parent Sample Id: 644979-001 MS Sample Id: 644979-001 S MSD Sample Id: 644979-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | 0.100 | 0.0903 | 90 | 0.0737 | 74 | 70-130 | 20 | 35 | mg/kg | 12.04.19 11:18 | |
| Toluene | <0.00200 | 0.100 | 0.0910 | 91 | 0.0740 | 74 | 70-130 | 21 | 35 | mg/kg | 12.04.19 11:18 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0904 | 90 | 0.0720 | 72 | 71-129 | 23 | 35 | mg/kg | 12.04.19 11:18 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.193 | 97 | 0.154 | 77 | 70-135 | 22 | 35 | mg/kg | 12.04.19 11:18 | |
| o-Xylene | <0.00200 | 0.100 | 0.0963 | 96 | 0.0760 | 76 | 71-133 | 24 | 35 | mg/kg | 12.04.19 11:18 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 103 | | 105 | | 70-130 | % | 12.04.19 11:18 |
| 4-Bromofluorobenzene | 119 | | 118 | | 70-130 | % | 12.04.19 11:18 |

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

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

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

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



Final 1.000

# Chain of Custody

Work Order No: 644974

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 Craslbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701
www.xenco.com



| | | | |
|---|---|---|---|
| Project Manager: | Chris McKisson | Bill to: (if different) | |
| Company Name: | LT Environmental | Company Name: | |
| Address: | 820 Megan Ave, Unit B | Address: | |
| City, State ZIP: | Rifle CO 81650 | City, State ZIP: | |
| Phone: | 970 285 9985 | Email: | cmckisson@ltenv.com & abyers@ltenv.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | RDU 57 | Turn Around | |
| Project Number: | 034819059 | Routine ☐ | |
| Project Location | Rural Eddy County | Rush: 24 HR | |
| Sampler's Name: | Anna Byers | Due Date: | |
| PO #: | N/A | Quote #: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Temperature (°C): | 1-2 | Thermometer ID | TNM007 |
| Received Intact: | (Yes) No | | |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | 2 |

**Preservative Codes**

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

| Lab ID | Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | BH08 | S | 12/3/19 | 1555 | 7' | 1 | x | x | x | |
| | BH08A | S | 12/3/19 | 1605 | 9' | 1 | x | x | x | |

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr 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 | Anna Byers | | 12-4-2019 | | | |
| 2 | | | | | Corbin | 12/4/19 08:45 |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |

Revised Date 022619 Rev. 2019.1

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 12/04/2019 08:45:00 AM

**Work Order #:** 644979

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

**Temperature Measuring device used : T NM 007**

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | 1.2 |
| #2 *Shipping container in good condition? | **Yes** |
| #3 *Samples received on ice? | **Yes** |
| #4 *Custody Seals intact on shipping container/ cooler? | **No** |
| #5 Custody Seals intact on sample bottles? | **No** |
| #6*Custody Seals Signed and dated? | **No** |
| #7 *Chain of Custody present? | **Yes** |
| #8 Any missing/extra samples? | **Yes** |
| #9 Chain of Custody signed when relinquished/ received? | **Yes** |
| #10 Chain of Custody agrees with sample labels/matrix? | **Yes** |
| #11 Container label(s) legible and intact? | **Yes** |
| #12 Samples in proper container/ bottle? | **Yes** |
| #13 Samples properly preserved? | **Yes** |
| #14 Sample container(s) intact? | **Yes** |
| #15 Sufficient sample amount for indicated test(s)? | **Yes** |
| #16 All samples received within hold time? | **Yes** |
| #17 Subcontract of sample(s)? | **Yes** |
| #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:** Martha Castro Date: 12/04/2019

**Checklist reviewed by:** Jessica Kramer Date: 12/05/2019

# Analytical Report 644980

## for

## LT Environmental, Inc.

**Project Manager: Chris McKisson**

**RDU 57**

**034819059**

**05-DEC-19**

Collected By: Client


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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

05-DEC-19

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

Reference: XENCO Report No(s): **644980**
**RDU 57**
Project Address: Rural Eddy County

**Chris McKisson**:

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) 644980. 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. 644980 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

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

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

# Sample Cross Reference 644980

## LT Environmental, Inc., Arvada, CO

RDU 57

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| BH08B | S | 12-03-19 16:50 | 15 ft | 644980-001 |

# CASE NARRATIVE

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

***Project Name: RDU 57***

Project ID: *034819059*
Work Order Number(s): *644980*

Report Date: *05-DEC-19*
Date Received: *12/04/2019*

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3109452 BTEX by EPA 8021B

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

# Certificate of Analysis Summary 644980

## LT Environmental, Inc., Arvada, CO

## Project Name: RDU 57

**Project Id:** 034819059
**Contact:** Chris McKisson
**Project Location:** Rural Eddy County

**Date Received in Lab:** Wed Dec-04-19 08:45 am
**Report Date:** 05-DEC-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | |
|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 644980-001 | | | | | |
| | ***Field Id:*** | BH08B | | | | | |
| | ***Depth:*** | 15- ft | | | | | |
| | ***Matrix:*** | SOIL | | | | | |
| | ***Sampled:*** | Dec-03-19 16:50 | | | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Dec-04-19 10:00 | | | | | |
| | ***Analyzed:*** | Dec-04-19 13:19 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | | | | |
| Benzene | | <0.00201 | 0.00201 | | | | |
| Toluene | | <0.00201 | 0.00201 | | | | |
| Ethylbenzene | | <0.00201 | 0.00201 | | | | |
| m,p-Xylenes | | <0.00402 | 0.00402 | | | | |
| o-Xylene | | <0.00201 | 0.00201 | | | | |
| Xylenes, Total | | <0.00201 | 0.00201 | | | | |
| Total BTEX | | <0.00201 | 0.00201 | | | | |
| **Chloride by EPA 300** | ***Extracted:*** | Dec-04-19 11:00 | | | | | |
| | ***Analyzed:*** | Dec-04-19 15:30 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | | | | |
| Chloride | | 14400 | 496 | | | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | Dec-04-19 11:00 | | | | | |
| | ***Analyzed:*** | Dec-04-19 14:57 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | | | | |
| Gasoline Range Hydrocarbons (GRO) | | <50.1 | 50.1 | | | | |
| Diesel Range Organics (DRO) | | <50.1 | 50.1 | | | | |
| Motor Oil Range Hydrocarbons (MRO) | | <50.1 | 50.1 | | | | |
| Total GRO-DRO | | <50.1 | 50.1 | | | | |
| Total TPH | | <50.1 | 50.1 | | | | |



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

Jessica Kramer
Project Assistant

# Certificate of Analytical Results 644980

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH08B** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644980-001 | Date Collected: | 12.03.19 16.50 | Sample Depth: | 15 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109449 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **14400** | 496 | mg/kg | 12.04.19 15.30 | | 50 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109448 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 12.04.19 14.57 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 12.04.19 14.57 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 12.04.19 14.57 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 12.04.19 14.57 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 12.04.19 14.57 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 101 | % | 70-135 | 12.04.19 14.57 | |
| o-Terphenyl | 84-15-1 | 111 | % | 70-135 | 12.04.19 14.57 | |

# Certificate of Analytical Results 644980

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH08B** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644980-001 | Date Collected: | 12.03.19 16.50 | Sample Depth: | 15 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.04.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3109452 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 12.04.19 13.19 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 12.04.19 13.19 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 12.04.19 13.19 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 12.04.19 13.19 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 12.04.19 13.19 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 12.04.19 13.19 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 12.04.19 13.19 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 104 | % | 70-130 | 12.04.19 13.19 | |
| 4-Bromofluorobenzene | 460-00-4 | 122 | % | 70-130 | 12.04.19 13.19 | |

# Flagging Criteria

**X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

**B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

**D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

**E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

**F** RPD exceeded lab control limits.

**J** The target analyte was positively identified below the quantitation limit and above the detection limit.

**U** Analyte was not detected.

**L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

**H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

**K** Sample analyzed outside of recommended hold time.

**JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

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

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

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

+ NELAC certification not offered for this compound.

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

# QC Summary 644980



## LT Environmental, Inc.

RDU 57

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109449 — Matrix: Solid — Date Prep: 12.04.19
MB Sample Id: 7691687-1-BLK — LCS Sample Id: 7691687-1-BKS — LCSD Sample Id: 7691687-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <10.0 | 250 | 256 | 102 | 253 | 101 | 90-110 | 1 | 20 | mg/kg | 12.04.19 12:28 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109449 — Matrix: Soil — Date Prep: 12.04.19
Parent Sample Id: 644967-009 — MS Sample Id: 644967-009 S — MSD Sample Id: 644967-009 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 6.69 | 200 | 215 | 104 | 213 | 104 | 90-110 | 1 | 20 | mg/kg | 12.04.19 14:15 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109449 — Matrix: Soil — Date Prep: 12.04.19
Parent Sample Id: 645029-004 — MS Sample Id: 645029-004 S — MSD Sample Id: 645029-004 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 61.6 | 200 | 271 | 105 | 273 | 106 | 90-110 | 1 | 20 | mg/kg | 12.04.19 12:47 | |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3109448 — Matrix: Solid — Date Prep: 12.04.19
MB Sample Id: 7691706-1-BLK — LCS Sample Id: 7691706-1-BKS — LCSD Sample Id: 7691706-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <50.0 | 1000 | 914 | 91 | 890 | 89 | 70-135 | 3 | 35 | mg/kg | 12.04.19 09:53 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 1030 | 103 | 1090 | 109 | 70-135 | 6 | 35 | mg/kg | 12.04.19 09:53 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 104 | | 120 | | 123 | | 70-135 | % | 12.04.19 09:53 |
| o-Terphenyl | 115 | | 118 | | 126 | | 70-135 | % | 12.04.19 09:53 |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3109448 — Matrix: Solid — Date Prep: 12.04.19
MB Sample Id: 7691706-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 12.04.19 09:33 | |

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



Final 1.000

# QC Summary 644980



## LT Environmental, Inc.

RDU 57

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3109448 Matrix: Soil Date Prep: 12.04.19
Parent Sample Id: 644967-001 MS Sample Id: 644967-001 S MSD Sample Id: 644967-001 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) | <50.2 | 1000 | 925 | 93 | 893 | 90 | 70-135 | 4 | 35 | mg/kg | 12.04.19 11:20 | |
| Diesel Range Organics (DRO) | <50.2 | 1000 | 1140 | 114 | 1020 | 103 | 70-135 | 11 | 35 | mg/kg | 12.04.19 11:20 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 126 | | 122 | | 70-135 | % | 12.04.19 11:20 |
| o-Terphenyl | 130 | | 121 | | 70-135 | % | 12.04.19 11:20 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3109452 Matrix: Solid Date Prep: 12.04.19
MB Sample Id: 7691694-1-BLK LCS Sample Id: 7691694-1-BKS LCSD Sample Id: 7691694-1-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 | 0.0892 | 89 | 0.0958 | 96 | 70-130 | 7 | 35 | mg/kg | 12.04.19 10:39 | |
| Toluene | <0.00200 | 0.100 | 0.0913 | 91 | 0.0974 | 97 | 70-130 | 6 | 35 | mg/kg | 12.04.19 10:39 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0913 | 91 | 0.0970 | 97 | 71-129 | 6 | 35 | mg/kg | 12.04.19 10:39 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.194 | 97 | 0.205 | 103 | 70-135 | 6 | 35 | mg/kg | 12.04.19 10:39 | |
| o-Xylene | <0.00200 | 0.100 | 0.0970 | 97 | 0.103 | 103 | 71-133 | 6 | 35 | mg/kg | 12.04.19 10:39 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 97 | | 102 | | 102 | | 70-130 | % | 12.04.19 10:39 |
| 4-Bromofluorobenzene | 109 | | 115 | | 115 | | 70-130 | % | 12.04.19 10:39 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3109452 Matrix: Soil Date Prep: 12.04.19
Parent Sample Id: 644979-001 MS Sample Id: 644979-001 S MSD Sample Id: 644979-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | 0.100 | 0.0903 | 90 | 0.0737 | 74 | 70-130 | 20 | 35 | mg/kg | 12.04.19 11:18 | |
| Toluene | <0.00200 | 0.100 | 0.0910 | 91 | 0.0740 | 74 | 70-130 | 21 | 35 | mg/kg | 12.04.19 11:18 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0904 | 90 | 0.0720 | 72 | 71-129 | 23 | 35 | mg/kg | 12.04.19 11:18 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.193 | 97 | 0.154 | 77 | 70-135 | 22 | 35 | mg/kg | 12.04.19 11:18 | |
| o-Xylene | <0.00200 | 0.100 | 0.0963 | 96 | 0.0760 | 76 | 71-133 | 24 | 35 | mg/kg | 12.04.19 11:18 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 103 | | 105 | | 70-130 | % | 12.04.19 11:18 |
| 4-Bromofluorobenzene | 119 | | 118 | | 70-130 | % | 12.04.19 11:18 |

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

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

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

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



Final 1.000

# Chain of Custody

Work Order No: 644980

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 Craslbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701
www.xenco.com



| | | | |
|---|---|---|---|
| Project Manager: | Chris McKisson | Bill to: (if different) | |
| Company Name: | LT Environmental | Company Name: | |
| Address: | 820 Megan Ave, Unit B | Address: | |
| City, State ZIP: | Rifle CO 81650 | City, State ZIP: | |
| Phone: | 970 285 9985 | Email: | cmckisson@ltenv.com, tabyers@ltenv.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | RDU 57 | Turn Around | |
| Project Number: | 034819059 | Routine ☐ | |
| Project Location | Rural Eddy County | Rush: 24 HR | |
| Sampler's Name: | Anna Byers | Due Date: | |
| PO #: | N/A | Quote #: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Temperature (°C): | 1-2°C | Thermometer ID | TNM007 |
| Received Intact: | (Yes) No | | |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | 1 |

| Lab ID | Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | Pres. Code | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|---|---|
| | BH08B | S | 12/3/19 | 1650 | 15' | 1 | | X | X | X |

**ANALYSIS REQUEST**

**Preservative Codes**

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

**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 | Anna Byers | | 12-4-2019 | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |

Revised Date 022619 Rev. 2019.1

# Analytical Report 646770

## for

## LT Environmental, Inc.

**Project Manager: Chris McKisson**

**RDU 57**

**034819059**

**19-DEC-19**

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

19-DEC-19

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

Reference: XENCO Report No(s): **646770**
**RDU 57**
Project Address: Rural Eddy County

**Chris McKisson**:

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) 646770. 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. 646770 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

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

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

# Sample Cross Reference 646770

## LT Environmental, Inc., Arvada, CO

RDU 57

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| FS01 | S | 12-17-19 13:25 | 25 ft | 646770-001 |
| FS02 | S | 12-17-19 15:40 | 25.5 ft | 646770-002 |
| SW01 | S | 12-17-19 12:20 | 2 - 12 ft | 646770-003 |
| SW02 | S | 12-17-19 12:25 | 12 - 23 ft | 646770-004 |
| SW03 | S | 12-17-19 12:53 | 0.5 - 12 ft | 646770-005 |
| SW04 | S | 12-17-19 12:50 | 12 - 23 ft | 646770-006 |

# CASE NARRATIVE

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

***Project Name: RDU 57***

Project ID: *034819059*
Work Order Number(s): *646770*

Report Date: *19-DEC-19*
Date Received: *12/18/2019*

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3111020 BTEX by EPA 8021B

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

Batch: LBA-3111023 Chloride by EPA 300

Lab Sample ID 646843-005 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 646770-001, -002, -003, -004, -005, -006.

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

# Certificate of Analysis Summary 646770

## LT Environmental, Inc., Arvada, CO

## Project Name: RDU 57

**Project Id:** 034819059
**Contact:** Chris McKisson
**Project Location:** Rural Eddy County

**Date Received in Lab:** Wed Dec-18-19 09:20 am
**Report Date:** 19-DEC-19
**Project Manager:** Jessica Kramer

| Analysis Requested | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 646770-001 | | 646770-002 | | 646770-003 | | 646770-004 | | 646770-005 | | 646770-006 | |
| | ***Field Id:*** | FS01 | | FS02 | | SW01 | | SW02 | | SW03 | | SW04 | |
| | ***Depth:*** | 25- ft | | 25.5- ft | | 2-12 ft | | 12-23 ft | | 0.5-12 ft | | 12-23 ft | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Dec-17-19 13:25 | | Dec-17-19 15:40 | | Dec-17-19 12:20 | | Dec-17-19 12:25 | | Dec-17-19 12:53 | | Dec-17-19 12:50 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Dec-18-19 11:00 | | Dec-18-19 11:00 | | Dec-18-19 11:00 | | Dec-18-19 11:00 | | Dec-18-19 11:00 | | Dec-18-19 14:00 | |
| | ***Analyzed:*** | Dec-18-19 14:48 | | Dec-18-19 15:07 | | Dec-18-19 16:23 | | Dec-18-19 15:26 | | Dec-18-19 15:45 | | Dec-18-19 16:04 | |
| | ***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 | <0.00202 | 0.00202 | <0.0253 | 0.0253 | <0.00202 | 0.00202 | <0.00198 | 0.00198 | <0.00200 | 0.00200 |
| Toluene | | <0.00199 | 0.00199 | <0.00202 | 0.00202 | 0.355 | 0.101 | <0.00202 | 0.00202 | <0.00198 | 0.00198 | <0.00200 | 0.00200 |
| Ethylbenzene | | <0.00199 | 0.00199 | <0.00202 | 0.00202 | 0.939 | 0.101 | <0.00202 | 0.00202 | <0.00198 | 0.00198 | <0.00200 | 0.00200 |
| m,p-Xylenes | | <0.00398 | 0.00398 | <0.00405 | 0.00405 | 2.25 | 0.202 | <0.00404 | 0.00404 | <0.00396 | 0.00396 | <0.00401 | 0.00401 |
| o-Xylene | | <0.00199 | 0.00199 | <0.00202 | 0.00202 | 1.65 | 0.101 | <0.00202 | 0.00202 | <0.00198 | 0.00198 | <0.00200 | 0.00200 |
| Xylenes, Total | | <0.00199 | 0.00199 | <0.00202 | 0.00202 | 3.90 | 0.101 | <0.00202 | 0.00202 | <0.00198 | 0.00198 | <0.00200 | 0.00200 |
| Total BTEX | | <0.00199 | 0.00199 | <0.00202 | 0.00202 | 5.19 | 0.0253 | <0.00202 | 0.00202 | <0.00198 | 0.00198 | <0.00200 | 0.00200 |
| **Chloride by EPA 300** | ***Extracted:*** | Dec-18-19 14:30 | | Dec-18-19 14:30 | | Dec-18-19 14:30 | | Dec-18-19 14:30 | | Dec-18-19 14:30 | | Dec-18-19 14:30 | |
| | ***Analyzed:*** | Dec-18-19 16:34 | | Dec-18-19 16:52 | | Dec-18-19 16:57 | | Dec-18-19 17:03 | | Dec-18-19 17:09 | | Dec-18-19 17:26 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 36.5 | 9.98 | <10.1 | 10.1 | 25.8 | 10.1 | 3340 | 10.0 | <9.94 | 9.94 | 114 | 9.98 |
| **TPH by SW8015 Mod** | ***Extracted:*** | Dec-18-19 11:30 | | Dec-18-19 11:30 | | Dec-18-19 11:30 | | Dec-18-19 11:30 | | Dec-18-19 11:30 | | Dec-18-19 11:30 | |
| | ***Analyzed:*** | Dec-18-19 12:30 | | Dec-18-19 12:50 | | Dec-18-19 13:10 | | Dec-18-19 13:10 | | Dec-18-19 13:30 | | Dec-18-19 14:02 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | <49.9 | 49.9 | <50.0 | 50.0 | 294 | 50.1 | <50.0 | 50.0 | <50.3 | 50.3 | <50.3 | 50.3 |
| Diesel Range Organics (DRO) | | <49.9 | 49.9 | <50.0 | 50.0 | 999 | 50.1 | <50.0 | 50.0 | <50.3 | 50.3 | <50.3 | 50.3 |
| Motor Oil Range Hydrocarbons (MRO) | | <49.9 | 49.9 | <50.0 | 50.0 | 83.5 | 50.1 | <50.0 | 50.0 | <50.3 | 50.3 | <50.3 | 50.3 |
| Total GRO-DRO | | <49.9 | 49.9 | <50.0 | 50.0 | 1290 | 50.1 | <50.0 | 50.0 | <50.3 | 50.3 | <50.3 | 50.3 |
| Total TPH | | <49.9 | 49.9 | <50.0 | 50.0 | 1380 | 50.1 | <50.0 | 50.0 | <50.3 | 50.3 | <50.3 | 50.3 |



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Jessica Kramer
Project Assistant

# Certificate of Analytical Results 646770

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS01** | Matrix: | Soil | Date Received: | 12.18.19 09.20 |
| Lab Sample Id: | 646770-001 | Date Collected: | 12.17.19 13.25 | Sample Depth: | 25 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.18.19 14.30 | Basis: | Wet Weight |
| Seq Number: | 3111023 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **36.5** | 9.98 | mg/kg | 12.18.19 16.34 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.18.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3111041 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.9 | 49.9 | mg/kg | 12.18.19 12.30 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.9 | 49.9 | mg/kg | 12.18.19 12.30 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.9 | 49.9 | mg/kg | 12.18.19 12.30 | U | 1 |
| Total GRO-DRO | PHC628 | <49.9 | 49.9 | mg/kg | 12.18.19 12.30 | U | 1 |
| Total TPH | PHC635 | <49.9 | 49.9 | mg/kg | 12.18.19 12.30 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 90 | % | 70-135 | 12.18.19 12.30 | |
| o-Terphenyl | 84-15-1 | 96 | % | 70-135 | 12.18.19 12.30 | |

# Certificate of Analytical Results 646770

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS01** | Matrix: | Soil | Date Received: | 12.18.19 09.20 |
| Lab Sample Id: | 646770-001 | Date Collected: | 12.17.19 13.25 | Sample Depth: | 25 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.18.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3111020 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 12.18.19 14.48 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 12.18.19 14.48 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 12.18.19 14.48 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 12.18.19 14.48 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 12.18.19 14.48 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 12.18.19 14.48 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 12.18.19 14.48 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 100 | % | 70-130 | 12.18.19 14.48 | |
| 4-Bromofluorobenzene | 460-00-4 | 109 | % | 70-130 | 12.18.19 14.48 | |

# Certificate of Analytical Results 646770

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS02** | Matrix: | Soil | Date Received: | 12.18.19 09.20 |
| Lab Sample Id: | 646770-002 | Date Collected: | 12.17.19 15.40 | Sample Depth: | 25.5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.18.19 14.30 | Basis: | Wet Weight |
| Seq Number: | 3111023 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <10.1 | 10.1 | mg/kg | 12.18.19 16.52 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.18.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3111041 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 12.18.19 12.50 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 12.18.19 12.50 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 12.18.19 12.50 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 12.18.19 12.50 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 12.18.19 12.50 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 88 | % | 70-135 | 12.18.19 12.50 | |
| o-Terphenyl | 84-15-1 | 91 | % | 70-135 | 12.18.19 12.50 | |

# Certificate of Analytical Results 646770

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS02** | Matrix: | Soil | Date Received: | 12.18.19 09.20 |
| Lab Sample Id: | 646770-002 | Date Collected: | 12.17.19 15.40 | Sample Depth: | 25.5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.18.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3111020 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 12.18.19 15.07 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 12.18.19 15.07 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 12.18.19 15.07 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00405 | 0.00405 | mg/kg | 12.18.19 15.07 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 12.18.19 15.07 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 12.18.19 15.07 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 12.18.19 15.07 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 119 | % | 70-130 | 12.18.19 15.07 | |
| 1,4-Difluorobenzene | 540-36-3 | 97 | % | 70-130 | 12.18.19 15.07 | |

# Certificate of Analytical Results 646770

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW01** | Matrix: | Soil | Date Received: | 12.18.19 09.20 |
| Lab Sample Id: | 646770-003 | Date Collected: | 12.17.19 12.20 | Sample Depth: | 2 - 12 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.18.19 14.30 | Basis: | Wet Weight |
| Seq Number: | 3111023 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **25.8** | 10.1 | mg/kg | 12.18.19 16.57 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.18.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3111041 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **294** | 50.1 | mg/kg | 12.18.19 13.10 | | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **999** | 50.1 | mg/kg | 12.18.19 13.10 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **83.5** | 50.1 | mg/kg | 12.18.19 13.10 | | 1 |
| **Total GRO-DRO** | PHC628 | **1290** | 50.1 | mg/kg | 12.18.19 13.10 | | 1 |
| **Total TPH** | PHC635 | **1380** | 50.1 | mg/kg | 12.18.19 13.10 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 104 | % | 70-135 | 12.18.19 13.10 | |
| o-Terphenyl | 84-15-1 | 103 | % | 70-135 | 12.18.19 13.10 | |

# Certificate of Analytical Results 646770

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW01** | Matrix: | Soil | Date Received: | 12.18.19 09.20 |
| Lab Sample Id: | 646770-003 | Date Collected: | 12.17.19 12.20 | Sample Depth: | 2 - 12 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.18.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3111020 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.0253 | 0.0253 | mg/kg | 12.18.19 16.23 | U | 50 |
| **Toluene** | 108-88-3 | **0.355** | 0.101 | mg/kg | 12.18.19 16.23 | | 50 |
| **Ethylbenzene** | 100-41-4 | **0.939** | 0.101 | mg/kg | 12.18.19 16.23 | | 50 |
| **m,p-Xylenes** | 179601-23-1 | **2.25** | 0.202 | mg/kg | 12.18.19 16.23 | | 50 |
| **o-Xylene** | 95-47-6 | **1.65** | 0.101 | mg/kg | 12.18.19 16.23 | | 50 |
| **Xylenes, Total** | 1330-20-7 | **3.90** | 0.101 | mg/kg | 12.18.19 16.23 | | 50 |
| **Total BTEX** | | **5.19** | 0.0253 | mg/kg | 12.18.19 16.23 | | 50 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 12.18.19 16.23 | |
| 4-Bromofluorobenzene | 460-00-4 | 125 | % | 70-130 | 12.18.19 16.23 | |

# Certificate of Analytical Results 646770

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW02** | Matrix: | Soil | Date Received: | 12.18.19 09.20 |
| Lab Sample Id: | 646770-004 | Date Collected: | 12.17.19 12.25 | Sample Depth: | 12 - 23 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.18.19 14.30 | Basis: | Wet Weight |
| Seq Number: | 3111023 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **3340** | 10.0 | mg/kg | 12.18.19 17.03 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.18.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3111041 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 12.18.19 13.10 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 12.18.19 13.10 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 12.18.19 13.10 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 12.18.19 13.10 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 12.18.19 13.10 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 87 | % | 70-135 | 12.18.19 13.10 | |
| o-Terphenyl | 84-15-1 | 90 | % | 70-135 | 12.18.19 13.10 | |

# Certificate of Analytical Results 646770

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW02** | Matrix: | Soil | Date Received: | 12.18.19 09.20 |
| Lab Sample Id: | 646770-004 | Date Collected: | 12.17.19 12.25 | Sample Depth: | 12 - 23 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.18.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3111020 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 12.18.19 15.26 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 12.18.19 15.26 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 12.18.19 15.26 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00404 | 0.00404 | mg/kg | 12.18.19 15.26 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 12.18.19 15.26 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 12.18.19 15.26 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 12.18.19 15.26 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 12.18.19 15.26 | |
| 4-Bromofluorobenzene | 460-00-4 | 120 | % | 70-130 | 12.18.19 15.26 | |

# Certificate of Analytical Results 646770

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW03** | Matrix: | Soil | Date Received: | 12.18.19 09.20 |
| Lab Sample Id: | 646770-005 | Date Collected: | 12.17.19 12.53 | Sample Depth: | 0.5 - 12 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.18.19 14.30 | Basis: | Wet Weight |
| Seq Number: | 3111023 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.94 | 9.94 | mg/kg | 12.18.19 17.09 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.18.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3111041 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.3 | 50.3 | mg/kg | 12.18.19 13.30 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.3 | 50.3 | mg/kg | 12.18.19 13.30 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.3 | 50.3 | mg/kg | 12.18.19 13.30 | U | 1 |
| Total GRO-DRO | PHC628 | <50.3 | 50.3 | mg/kg | 12.18.19 13.30 | U | 1 |
| Total TPH | PHC635 | <50.3 | 50.3 | mg/kg | 12.18.19 13.30 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 86 | % | 70-135 | 12.18.19 13.30 | |
| o-Terphenyl | 84-15-1 | 89 | % | 70-135 | 12.18.19 13.30 | |

# Certificate of Analytical Results 646770

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW03** | Matrix: | Soil | Date Received: | 12.18.19 09.20 |
| Lab Sample Id: | 646770-005 | Date Collected: | 12.17.19 12.53 | Sample Depth: | 0.5 - 12 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.18.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3111020 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00198 | 0.00198 | mg/kg | 12.18.19 15.45 | U | 1 |
| Toluene | 108-88-3 | <0.00198 | 0.00198 | mg/kg | 12.18.19 15.45 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00198 | 0.00198 | mg/kg | 12.18.19 15.45 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00396 | 0.00396 | mg/kg | 12.18.19 15.45 | U | 1 |
| o-Xylene | 95-47-6 | <0.00198 | 0.00198 | mg/kg | 12.18.19 15.45 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00198 | 0.00198 | mg/kg | 12.18.19 15.45 | U | 1 |
| Total BTEX | | <0.00198 | 0.00198 | mg/kg | 12.18.19 15.45 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 122 | % | 70-130 | 12.18.19 15.45 | |
| 1,4-Difluorobenzene | 540-36-3 | 104 | % | 70-130 | 12.18.19 15.45 | |

# Certificate of Analytical Results 646770

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW04** | Matrix: | Soil | Date Received: | 12.18.19 09.20 |
| Lab Sample Id: | 646770-006 | Date Collected: | 12.17.19 12.50 | Sample Depth: | 12 - 23 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.18.19 14.30 | Basis: | Wet Weight |
| Seq Number: | 3111023 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **114** | 9.98 | mg/kg | 12.18.19 17.26 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.18.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3111041 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.3 | 50.3 | mg/kg | 12.18.19 14.02 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.3 | 50.3 | mg/kg | 12.18.19 14.02 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.3 | 50.3 | mg/kg | 12.18.19 14.02 | U | 1 |
| Total GRO-DRO | PHC628 | <50.3 | 50.3 | mg/kg | 12.18.19 14.02 | U | 1 |
| Total TPH | PHC635 | <50.3 | 50.3 | mg/kg | 12.18.19 14.02 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 86 | % | 70-135 | 12.18.19 14.02 | |
| o-Terphenyl | 84-15-1 | 93 | % | 70-135 | 12.18.19 14.02 | |

# Certificate of Analytical Results 646770

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW04** | Matrix: | Soil | Date Received: | 12.18.19 09.20 |
| Lab Sample Id: | 646770-006 | Date Collected: | 12.17.19 12.50 | Sample Depth: | 12 - 23 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.18.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3111020 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.18.19 16.04 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.18.19 16.04 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.18.19 16.04 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 12.18.19 16.04 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.18.19 16.04 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.18.19 16.04 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.18.19 16.04 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 120 | % | 70-130 | 12.18.19 16.04 | |
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 12.18.19 16.04 | |

# Flagging Criteria

**X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

**B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

**D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

**E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

**F** RPD exceeded lab control limits.

**J** The target analyte was positively identified below the quantitation limit and above the detection limit.

**U** Analyte was not detected.

**L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

**H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

**K** Sample analyzed outside of recommended hold time.

**JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

**PQL** Practical Quantitation Limit **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 646770



## LT Environmental, Inc.

RDU 57

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3111023 — Matrix: Solid — Date Prep: 12.18.19
MB Sample Id: 7692734-1-BLK — LCS Sample Id: 7692734-1-BKS — LCSD Sample Id: 7692734-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <10.0 | 250 | 256 | 102 | 259 | 104 | 90-110 | 1 | 20 | mg/kg | 12.18.19 16:16 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3111023 — Matrix: Soil — Date Prep: 12.18.19
Parent Sample Id: 646770-001 — MS Sample Id: 646770-001 S — MSD Sample Id: 646770-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 36.5 | 199 | 259 | 112 | 259 | 111 | 90-110 | 0 | 20 | mg/kg | 12.18.19 16:40 | X |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3111023 — Matrix: Soil — Date Prep: 12.18.19
Parent Sample Id: 646843-005 — MS Sample Id: 646843-005 S — MSD Sample Id: 646843-005 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 4910 | 200 | 5050 | 70 | 5050 | 70 | 90-110 | 0 | 20 | mg/kg | 12.18.19 18:12 | X |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3111041 — Matrix: Solid — Date Prep: 12.18.19
MB Sample Id: 7692768-1-BLK — LCS Sample Id: 7692768-1-BKS — LCSD Sample Id: 7692768-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <50.0 | 1000 | 941 | 94 | 921 | 92 | 70-135 | 2 | 35 | mg/kg | 12.18.19 12:10 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 820 | 82 | 791 | 79 | 70-135 | 4 | 35 | mg/kg | 12.18.19 12:10 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 85 | | 94 | | 106 | | 70-135 | % | 12.18.19 12:10 |
| o-Terphenyl | 87 | | 93 | | 91 | | 70-135 | % | 12.18.19 12:10 |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3111041 — Matrix: Solid — Date Prep: 12.18.19
MB Sample Id: 7692768-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 12.18.19 11:51 | |

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 646770



## LT Environmental, Inc.

RDU 57

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3111041 — Matrix: Soil — Date Prep: 12.18.19
Parent Sample Id: 646770-001 — MS Sample Id: 646770-001 S — MSD Sample Id: 646770-001 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) | <49.8 | 995 | 903 | 91 | 1000 | 100 | 70-135 | 10 | 35 | mg/kg | 12.18.19 12:30 | |
| Diesel Range Organics (DRO) | <49.8 | 995 | 777 | 78 | 885 | 89 | 70-135 | 13 | 35 | mg/kg | 12.18.19 12:30 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 113 | | 111 | | 70-135 | % | 12.18.19 12:30 |
| o-Terphenyl | 100 | | 111 | | 70-135 | % | 12.18.19 12:30 |

**Analytical Method:** BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3111020 — Matrix: Solid — Date Prep: 12.18.19
MB Sample Id: 7692736-1-BLK — LCS Sample Id: 7692736-1-BKS — LCSD Sample Id: 7692736-1-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 | 0.0939 | 94 | 0.0936 | 94 | 70-130 | 0 | 35 | mg/kg | 12.18.19 13:06 | |
| Toluene | <0.00200 | 0.100 | 0.0973 | 97 | 0.0972 | 97 | 70-130 | 0 | 35 | mg/kg | 12.18.19 13:06 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0969 | 97 | 0.0968 | 97 | 71-129 | 0 | 35 | mg/kg | 12.18.19 13:06 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.207 | 104 | 0.206 | 103 | 70-135 | 0 | 35 | mg/kg | 12.18.19 13:06 | |
| o-Xylene | <0.00200 | 0.100 | 0.104 | 104 | 0.104 | 104 | 71-133 | 0 | 35 | mg/kg | 12.18.19 13:06 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 103 | | 102 | | 102 | | 70-130 | % | 12.18.19 13:06 |
| 4-Bromofluorobenzene | 116 | | 118 | | 117 | | 70-130 | % | 12.18.19 13:06 |

**Analytical Method:** BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3111020 — Matrix: Soil — Date Prep: 12.18.19
Parent Sample Id: 646770-001 — MS Sample Id: 646770-001 S — MSD Sample Id: 646770-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | 0.100 | 0.0808 | 81 | 0.0991 | 99 | 70-130 | 20 | 35 | mg/kg | 12.18.19 13:44 | |
| Toluene | <0.00200 | 0.100 | 0.0832 | 83 | 0.103 | 103 | 70-130 | 21 | 35 | mg/kg | 12.18.19 13:44 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0822 | 82 | 0.102 | 102 | 71-129 | 21 | 35 | mg/kg | 12.18.19 13:44 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.174 | 87 | 0.217 | 109 | 70-135 | 22 | 35 | mg/kg | 12.18.19 13:44 | |
| o-Xylene | <0.00200 | 0.100 | 0.0874 | 87 | 0.110 | 110 | 71-133 | 23 | 35 | mg/kg | 12.18.19 13:44 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 104 | | 103 | | 70-130 | % | 12.18.19 13:44 |
| 4-Bromofluorobenzene | 120 | | 125 | | 70-130 | % | 12.18.19 13:44 |

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

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

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

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

# Chain of Custody

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 Crasibad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701
www.xenco.com

Work Order No: 444770

Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Chris McKisson | ~~Bill to: (if different)~~ → | |
| Company Name: | LT Environmental | ~~Company Name:~~ → | |
| Address: | 820 Megan Ave, Unit B | Address: | |
| City, State ZIP: | Rifle, CO 81650 | City, State ZIP: | |
| Phone: | 970-285-9985 | Email: | cmckisson@ltenv.com & abyers@ltenv.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | RDU 57 | Turn Around | |
| Project Number: | 03481905 9 | Routine | ☒ |
| Project Location | Rural Eddy County | Rush: | 5 DAY |
| Sampler's Name: | Anna Byers | Due Date: | |
| PO #: | 2RP-5719 | Quote #: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes (No) | Wet Ice: | (Yes) No |
| Temperature (°C): | 1.2 | Thermometer ID | T-NM-007 |
| Received Intact: | (Yes) No | | |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | 6 |

| Lab ID | Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | FS01 | S | 12/17/19 | 1325 | 25' | 1 | X | X | X | |
| | FS02 | | | 1540 | 25.5' | 1 | X | X | X | |
| | SW01 | | | 1220 | 2-12' | 1 | X | X | X | |
| | SW02 | | | 1225 | 12-23' | 1 | X | X | X | |
| | SW03 | | | 1253 | 0.5-12' | 1 | X | X | X | |
| | SW04 | ↓ | ↓ | 1250 | 12-23' | 1 | X | X | X | |

**Preservative Codes**

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

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 Anna Byers | | 12/18/19 8:30 | 2 | | |
| 3 | | 12/18/19 0920 | 4 | | |
| 5 | | | 6 | | |

Revised Date 022619 Rev. 2019.1

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 12/18/2019 09:20:00 AM

**Work Order #:** 646770

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

**Temperature Measuring device used : T-NM-007**

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | 1.2 |
| #2 *Shipping container in good condition? | **Yes** |
| #3 *Samples received on ice? | **Yes** |
| #4 *Custody Seals intact on shipping container/ cooler? | **Yes** |
| #5 Custody Seals intact on sample bottles? | **Yes** |
| #6*Custody Seals Signed and dated? | **Yes** |
| #7 *Chain of Custody present? | **Yes** |
| #8 Any missing/extra samples? | **No** |
| #9 Chain of Custody signed when relinquished/ received? | **Yes** |
| #10 Chain of Custody agrees with sample labels/matrix? | **Yes** |
| #11 Container label(s) legible and intact? | **Yes** |
| #12 Samples in proper container/ bottle? | **Yes** |
| #13 Samples properly preserved? | **Yes** |
| #14 Sample container(s) intact? | **Yes** |
| #15 Sufficient sample amount for indicated test(s)? | **Yes** |
| #16 All samples received within hold time? | **Yes** |
| #17 Subcontract of sample(s)? | **No** |
| #18 Water VOC samples have zero headspace? | **N/A** |

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

Analyst: PH Device/Lot#:

**Checklist completed by:** Elizabeth McClellan Date: 12/18/2019

**Checklist reviewed by:** Jessica Kramer Date: 12/19/2019

# Analytical Report 650047

## for

## LT Environmental, Inc.

**Project Manager: Chris McKisson**

**RDU 57**

**034819059**

**27-JAN-20**

Collected By: Client


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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

27-JAN-20

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

Reference: XENCO Report No(s): **650047**
**RDU 57**
Project Address: Rural Eddy County

**Chris McKisson**:

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) 650047. 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. 650047 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

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

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

# Sample Cross Reference 650047

## LT Environmental, Inc., Arvada, CO

RDU 57

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| SW05 | S | 01-22-20 13:45 | 0.5 - 12 ft | 650047-001 |
| SW06 | S | 01-22-20 13:55 | 12 - 23 ft | 650047-002 |
| FS03 | S | 01-22-20 11:30 | 23 ft | 650047-003 |

# CASE NARRATIVE

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

***Project Name: RDU 57***

Project ID: *034819059*
Work Order Number(s): *650047*

Report Date: *27-JAN-20*
Date Received: *01/23/2020*

**Sample receipt non conformances and comments:**

Corrected sample 002 name from SW05 to SW06 to match COC. Per Anna Byers email. V1.001 JK 01/27/20

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

None

**Analytical non conformances and comments:**

Batch: LBA-3114404 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

# Certificate of Analysis Summary 650047

## LT Environmental, Inc., Arvada, CO

## Project Name: RDU 57

**Project Id:** 034819059
**Contact:** Chris McKisson
**Project Location:** Rural Eddy County

**Date Received in Lab:** Thu Jan-23-20 11:45 am
**Report Date:** 27-JAN-20
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 650047-001 | | 650047-002 | | 650047-003 | | | | | |
| | ***Field Id:*** | SW05 | | SW06 | | FS03 | | | | | |
| | ***Depth:*** | 0.5-12 ft | | 12-23 ft | | 23- ft | | | | | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | | | | |
| | ***Sampled:*** | Jan-22-20 13:45 | | Jan-22-20 13:55 | | Jan-22-20 11:30 | | | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Jan-24-20 07:14 | | Jan-24-20 07:14 | | Jan-24-20 07:14 | | | | | |
| | ***Analyzed:*** | Jan-24-20 12:55 | | Jan-24-20 13:15 | | Jan-24-20 13:36 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | | |
| Benzene | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | <0.00201 | 0.00201 | | | | |
| Toluene | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | <0.00201 | 0.00201 | | | | |
| Ethylbenzene | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | <0.00201 | 0.00201 | | | | |
| m,p-Xylenes | | <0.00402 | 0.00402 | <0.00403 | 0.00403 | <0.00402 | 0.00402 | | | | |
| o-Xylene | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | <0.00201 | 0.00201 | | | | |
| Xylenes, Total | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | <0.00201 | 0.00201 | | | | |
| Total BTEX | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | <0.00201 | 0.00201 | | | | |
| **Chloride by EPA 300** | ***Extracted:*** | Jan-23-20 20:28 | | Jan-23-20 20:28 | | Jan-23-20 20:28 | | | | | |
| | ***Analyzed:*** | Jan-24-20 09:25 | | Jan-24-20 09:30 | | Jan-24-20 09:35 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | | |
| Chloride | | 44.1 | 10.1 | 22.1 | 9.98 | 82.0 | 10.0 | | | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | Jan-24-20 09:27 | | Jan-24-20 09:27 | | Jan-24-20 09:27 | | | | | |
| | ***Analyzed:*** | Jan-24-20 10:26 | | Jan-24-20 10:46 | | Jan-24-20 11:06 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | | |
| Gasoline Range Hydrocarbons (GRO) | | <50.3 | 50.3 | <50.0 | 50.0 | <50.1 | 50.1 | | | | |
| Diesel Range Organics (DRO) | | <50.3 | 50.3 | <50.0 | 50.0 | <50.1 | 50.1 | | | | |
| Motor Oil Range Hydrocarbons (MRO) | | <50.3 | 50.3 | <50.0 | 50.0 | <50.1 | 50.1 | | | | |
| Total GRO-DRO | | <50.3 | 50.3 | <50.0 | 50.0 | <50.1 | 50.1 | | | | |
| Total TPH | | <50.3 | 50.3 | <50.0 | 50.0 | <50.1 | 50.1 | | | | |



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

Version: 1.%

Jessica Kramer
Project Assistant

# Certificate of Analytical Results 650047

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW05** | Matrix: | Soil | Date Received: | 01.23.20 11.45 |
| Lab Sample Id: | 650047-001 | Date Collected: | 01.22.20 13.45 | Sample Depth: | 0.5 - 12 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.23.20 20.28 | Basis: | Wet Weight |
| Seq Number: | 3114325 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **44.1** | 10.1 | mg/kg | 01.24.20 09.25 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 01.24.20 09.27 | Basis: | Wet Weight |
| Seq Number: | 3114351 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.3 | 50.3 | mg/kg | 01.24.20 10.26 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.3 | 50.3 | mg/kg | 01.24.20 10.26 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.3 | 50.3 | mg/kg | 01.24.20 10.26 | U | 1 |
| Total GRO-DRO | PHC628 | <50.3 | 50.3 | mg/kg | 01.24.20 10.26 | U | 1 |
| Total TPH | PHC635 | <50.3 | 50.3 | mg/kg | 01.24.20 10.26 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 113 | % | 70-135 | 01.24.20 10.26 | |
| o-Terphenyl | 84-15-1 | 100 | % | 70-135 | 01.24.20 10.26 | |

# Certificate of Analytical Results 650047

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW05** | Matrix: | Soil | Date Received: | 01.23.20 11.45 |
| Lab Sample Id: | 650047-001 | Date Collected: | 01.22.20 13.45 | Sample Depth: | 0.5 - 12 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 07.14 | Basis: | Wet Weight |
| Seq Number: | 3114404 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 01.24.20 12.55 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 01.24.20 12.55 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 01.24.20 12.55 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 01.24.20 12.55 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 01.24.20 12.55 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 01.24.20 12.55 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 01.24.20 12.55 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 94 | % | 70-130 | 01.24.20 12.55 | |
| 1,4-Difluorobenzene | 540-36-3 | 108 | % | 70-130 | 01.24.20 12.55 | |

# Certificate of Analytical Results 650047

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW06** | Matrix: | Soil | Date Received: | 01.23.20 11.45 |
| Lab Sample Id: | 650047-002 | Date Collected: | 01.22.20 13.55 | Sample Depth: | 12 - 23 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.23.20 20.28 | Basis: | Wet Weight |
| Seq Number: | 3114325 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **22.1** | 9.98 | mg/kg | 01.24.20 09.30 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 01.24.20 09.27 | Basis: | Wet Weight |
| Seq Number: | 3114351 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 01.24.20 10.46 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 01.24.20 10.46 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 01.24.20 10.46 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 01.24.20 10.46 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 01.24.20 10.46 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 103 | % | 70-135 | 01.24.20 10.46 | |
| o-Terphenyl | 84-15-1 | 96 | % | 70-135 | 01.24.20 10.46 | |

# Certificate of Analytical Results 650047

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW06** | Matrix: | Soil | Date Received: | 01.23.20 11.45 |
| Lab Sample Id: | 650047-002 | Date Collected: | 01.22.20 13.55 | Sample Depth: | 12 - 23 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 07.14 | Basis: | Wet Weight |
| Seq Number: | 3114404 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 01.24.20 13.15 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 01.24.20 13.15 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 01.24.20 13.15 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00403 | 0.00403 | mg/kg | 01.24.20 13.15 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 01.24.20 13.15 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 01.24.20 13.15 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 01.24.20 13.15 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 94 | % | 70-130 | 01.24.20 13.15 | |
| 1,4-Difluorobenzene | 540-36-3 | 108 | % | 70-130 | 01.24.20 13.15 | |

# Certificate of Analytical Results 650047

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS03** | Matrix: | Soil | Date Received: | 01.23.20 11.45 |
| Lab Sample Id: | 650047-003 | Date Collected: | 01.22.20 11.30 | Sample Depth: | 23 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.23.20 20.28 | Basis: | Wet Weight |
| Seq Number: | 3114325 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **82.0** | 10.0 | mg/kg | 01.24.20 09.35 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 01.24.20 09.27 | Basis: | Wet Weight |
| Seq Number: | 3114351 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 01.24.20 11.06 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 01.24.20 11.06 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 01.24.20 11.06 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 01.24.20 11.06 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 01.24.20 11.06 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 99 | % | 70-135 | 01.24.20 11.06 | |
| o-Terphenyl | 84-15-1 | 91 | % | 70-135 | 01.24.20 11.06 | |

# Certificate of Analytical Results 650047

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS03** | Matrix: | Soil | Date Received: | 01.23.20 11.45 |
| Lab Sample Id: | 650047-003 | Date Collected: | 01.22.20 11.30 | Sample Depth: | 23 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 07.14 | Basis: | Wet Weight |
| Seq Number: | 3114404 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 01.24.20 13.36 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 01.24.20 13.36 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 01.24.20 13.36 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 01.24.20 13.36 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 01.24.20 13.36 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 01.24.20 13.36 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 01.24.20 13.36 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 109 | % | 70-130 | 01.24.20 13.36 | |
| 4-Bromofluorobenzene | 460-00-4 | 94 | % | 70-130 | 01.24.20 13.36 | |

# 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 650047



## LT Environmental, Inc.

RDU 57

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3114325 Matrix: Solid Date Prep: 01.23.20
MB Sample Id: 7695077-1-BLK LCS Sample Id: 7695077-1-BKS LCSD Sample Id: 7695077-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <10.0 | 250 | 247 | 99 | 246 | 98 | 90-110 | 0 | 20 | mg/kg | 01.24.20 08:08 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3114325 Matrix: Soil Date Prep: 01.23.20
Parent Sample Id: 650130-001 MS Sample Id: 650130-001 S MSD Sample Id: 650130-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 3190 | 201 | 3380 | 95 | 3400 | 104 | 90-110 | 1 | 20 | mg/kg | 01.24.20 08:29 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3114351 Matrix: Solid Date Prep: 01.24.20
MB Sample Id: 7695104-1-BLK LCS Sample Id: 7695104-1-BKS LCSD Sample Id: 7695104-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <50.0 | 1000 | 1300 | 130 | 1290 | 129 | 70-135 | 1 | 35 | mg/kg | 01.24.20 10:06 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 1180 | 118 | 1260 | 126 | 70-135 | 7 | 35 | mg/kg | 01.24.20 10:06 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 109 | | 134 | | 121 | | 70-135 | % | 01.24.20 10:06 |
| o-Terphenyl | 99 | | 122 | | 111 | | 70-135 | % | 01.24.20 10:06 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3114351 Matrix: Solid Date Prep: 01.24.20
MB Sample Id: 7695104-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 01.24.20 09:47 | |

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 650047



## LT Environmental, Inc.

RDU 57

**Analytical Method:** TPH by SW8015 Mod | Prep Method: SW8015P
Seq Number: 3114351 | Matrix: Soil | Date Prep: 01.24.20
Parent Sample Id: 650047-001 | MS Sample Id: 650047-001 S | MSD Sample Id: 650047-001 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) | <50.3 | 1010 | 1020 | 101 | 1090 | 109 | 70-135 | 7 | 35 | mg/kg | 01.24.20 10:26 | |
| Diesel Range Organics (DRO) | <50.3 | 1010 | 992 | 98 | 1040 | 104 | 70-135 | 5 | 35 | mg/kg | 01.24.20 10:26 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 122 | | 123 | | 70-135 | % | 01.24.20 10:26 |
| o-Terphenyl | 107 | | 109 | | 70-135 | % | 01.24.20 10:26 |

**Analytical Method:** BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3114404 | Matrix: Solid | Date Prep: 01.24.20
MB Sample Id: 7695073-1-BLK | LCS Sample Id: 7695073-1-BKS | LCSD Sample Id: 7695073-1-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 | 0.114 | 114 | 0.113 | 113 | 70-130 | 1 | 35 | mg/kg | 01.24.20 11:13 | |
| Toluene | <0.00200 | 0.100 | 0.104 | 104 | 0.103 | 103 | 70-130 | 1 | 35 | mg/kg | 01.24.20 11:13 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.100 | 100 | 0.0985 | 99 | 71-129 | 2 | 35 | mg/kg | 01.24.20 11:13 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.196 | 98 | 0.193 | 97 | 70-135 | 2 | 35 | mg/kg | 01.24.20 11:13 | |
| o-Xylene | <0.00200 | 0.100 | 0.100 | 100 | 0.0984 | 98 | 71-133 | 2 | 35 | mg/kg | 01.24.20 11:13 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 107 | | 108 | | 108 | | 70-130 | % | 01.24.20 11:13 |
| 4-Bromofluorobenzene | 90 | | 93 | | 93 | | 70-130 | % | 01.24.20 11:13 |

**Analytical Method:** BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3114404 | Matrix: Soil | Date Prep: 01.24.20
Parent Sample Id: 650047-001 | MS Sample Id: 650047-001 S | MSD Sample Id: 650047-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | 0.100 | 0.121 | 121 | 0.118 | 118 | 70-130 | 3 | 35 | mg/kg | 01.24.20 11:54 | |
| Toluene | <0.00200 | 0.100 | 0.108 | 108 | 0.0999 | 100 | 70-130 | 8 | 35 | mg/kg | 01.24.20 11:54 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.103 | 103 | 0.0877 | 88 | 71-129 | 16 | 35 | mg/kg | 01.24.20 11:54 | |
| m,p-Xylenes | <0.00401 | 0.200 | 0.200 | 100 | 0.167 | 84 | 70-135 | 18 | 35 | mg/kg | 01.24.20 11:54 | |
| o-Xylene | <0.00200 | 0.100 | 0.102 | 102 | 0.0880 | 88 | 71-133 | 15 | 35 | mg/kg | 01.24.20 11:54 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 107 | | 108 | | 70-130 | % | 01.24.20 11:54 |
| 4-Bromofluorobenzene | 93 | | 99 | | 70-130 | % | 01.24.20 11:54 |

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

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

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

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

# Chain of Custody

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 Crasbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701
www.xenco.com

Work Order No: 450047



| | | | |
|---|---|---|---|
| Project Manager: | Chris McKisson | Bill to: (if different) | |
| Company Name: | LT Environmental | Company Name: | |
| Address: | 820 Megan Ave, Unit B | Address: | |
| City, State ZIP: | Rifle, CO 81650 | City, State ZIP: | |
| Phone: | 970 285 9985 | Email: | cmckisson@ltenv.com & abyers@ltenv.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | RDU 57 | Turn Around | |
| Project Number: | 034819059 | Routine | ☒ |
| Project Location | RURAL EDDY COUNTY | Rush: | |
| Sampler's Name: | Anna Byers | Due Date: | |
| PO #: | 2RP-5716 | Quote #: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No |
| Temperature (°C): | 1.0 | Thermometer ID | T-NM-007 |
| Received Intact: | Yes No | Correction Factor: | -0.2 |
| Cooler Custody Seals: | Yes No N/A | Total Containers: | 3 |
| Sample Custody Seals: | Yes No N/A | | |

**Preservative Codes**

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

| Lab ID | Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | SW05 | S | 1/22/20 | 1345 | 0.5-12' | 1 | X | X | X | |
| | SW06 | S | 1/22/20 | 1355 | 12-23' | 1 | X | X | X | |
| | FS03 | S | 1/22/20 | 1130 | 23' | 1 | X | X | X | |

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr 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 |
|---|---|---|---|---|---|
| Anna Byers | | 1/23/20 11:00am | 2 | | 1/23/20 11:45 |
| | | | 4 | | |
| | | | 6 | | |

Revised Date 022619 Rev. 2019.1

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 01.23.2020 11.45.00 AM

**Work Order #:** 650047

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

**Temperature Measuring device used : T-NM-007**

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

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

Analyst: PH Device/Lot#:

**Checklist completed by:** Elizabeth McClellan Date: 01.23.2020

**Checklist reviewed by:** Jessica Kramer Date: 01.24.2020

Jessica Kramer

# Analytical Report 650235

## for

## LT Environmental, Inc.

**Project Manager: Chris McKisson**

**RDU 57**

**034819059**

**27-JAN-20**

Collected By: Client


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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

27-JAN-20

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

Reference: XENCO Report No(s): **650235**
**RDU 57**
Project Address: Rural Eddy County

**Chris McKisson**:

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) 650235. 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. 650235 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

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

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

# Sample Cross Reference 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| SW07 | S | 01-23-20 10:45 | 0.5 - 12 ft | 650235-001 |
| SW08 | S | 01-23-20 10:50 | 12 - 23 ft | 650235-002 |
| SW09 | S | 01-23-20 11:05 | 0.5 - 12 ft | 650235-003 |
| SW010 | S | 01-23-20 11:20 | 12 - 23 ft | 650235-004 |
| SW11 | S | 01-23-20 12:30 | 0.5 - 12 ft | 650235-005 |
| SW12 | S | 01-23-20 12:40 | 12 - 23 ft | 650235-006 |
| SW13 | S | 01-23-20 13:10 | 0.5 - 12 ft | 650235-007 |
| SW14 | S | 01-23-20 13:20 | 12 - 22 ft | 650235-008 |
| SW15 | S | 01-23-20 13:45 | 0.5 - 12 ft | 650235-009 |
| SW16 | S | 01-23-20 14:10 | 12 - 22 ft | 650235-010 |
| FS04 | S | 01-23-20 14:30 | 22 ft | 650235-011 |

# CASE NARRATIVE

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

***Project Name: RDU 57***

Project ID: *034819059*
Work Order Number(s): *650235*

Report Date: *27-JAN-20*
Date Received: *01/24/2020*

**Sample receipt non conformances and comments:**

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

None

**Analytical non conformances and comments:**

Batch: LBA-3114404 BTEX by EPA 8021B

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

# Certificate of Analysis Summary 650235

## LT Environmental, Inc., Arvada, CO

## Project Name: RDU 57

**Project Id:** 034819059
**Contact:** Chris McKisson
**Project Location:** Rural Eddy County

**Date Received in Lab:** Fri Jan-24-20 12:40 pm
**Report Date:** 27-JAN-20
**Project Manager:** Jessica Kramer

| Analysis Requested | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lab Id: | 650235-001 | | 650235-002 | | 650235-003 | | 650235-004 | | 650235-005 | | 650235-006 | |
| | Field Id: | SW07 | | SW08 | | SW09 | | SW010 | | SW11 | | SW12 | |
| | Depth: | 0.5-12 ft | | 12-23 ft | | 0.5-12 ft | | 12-23 ft | | 0.5-12 ft | | 12-23 ft | |
| | Matrix: | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | Sampled: | Jan-23-20 10:45 | | Jan-23-20 10:50 | | Jan-23-20 11:05 | | Jan-23-20 11:20 | | Jan-23-20 12:30 | | Jan-23-20 12:40 | |
| **BTEX by EPA 8021B** | Extracted: | Jan-24-20 15:30 | | Jan-24-20 15:30 | | Jan-24-20 15:30 | | Jan-24-20 15:30 | | Jan-24-20 15:30 | | Jan-24-20 15:30 | |
| | Analyzed: | Jan-24-20 15:38 | | Jan-24-20 15:58 | | Jan-24-20 17:13 | | Jan-24-20 17:33 | | Jan-24-20 17:53 | | Jan-24-20 18:14 | |
| | 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 | <0.00202 | 0.00202 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00198 | 0.00198 |
| Toluene | | <0.00202 | 0.00202 | <0.00202 | 0.00202 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00198 | 0.00198 |
| Ethylbenzene | | <0.00202 | 0.00202 | <0.00202 | 0.00202 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00198 | 0.00198 |
| m,p-Xylenes | | <0.00403 | 0.00403 | <0.00404 | 0.00404 | <0.00403 | 0.00403 | <0.00399 | 0.00399 | <0.00400 | 0.00400 | <0.00397 | 0.00397 |
| o-Xylene | | <0.00202 | 0.00202 | <0.00202 | 0.00202 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00198 | 0.00198 |
| Xylenes, Total | | <0.00202 | 0.00202 | <0.00202 | 0.00202 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00198 | 0.00198 |
| Total BTEX | | <0.00202 | 0.00202 | <0.00202 | 0.00202 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00198 | 0.00198 |
| **Chloride by EPA 300** | Extracted: | Jan-24-20 16:12 | | Jan-24-20 16:12 | | Jan-24-20 16:12 | | Jan-24-20 17:30 | | Jan-24-20 17:30 | | Jan-24-20 17:30 | |
| | Analyzed: | Jan-25-20 11:16 | | Jan-25-20 11:21 | | Jan-25-20 11:26 | | Jan-25-20 12:02 | | Jan-25-20 12:17 | | Jan-25-20 12:22 | |
| | Units/RL: | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 33.8 | 10.1 | 449 | 10.0 | 99.8 | 10.0 | 14.8 | 9.96 | 32.7 | 9.92 | 20.8 | 10.0 |
| **TPH by SW8015 Mod** | Extracted: | Jan-24-20 13:50 | | Jan-24-20 13:50 | | Jan-24-20 15:30 | | Jan-24-20 15:30 | | Jan-24-20 15:30 | | Jan-24-20 15:30 | |
| | Analyzed: | Jan-27-20 10:52 | | Jan-24-20 23:11 | | Jan-24-20 23:50 | | Jan-25-20 00:30 | | Jan-25-20 00:30 | | Jan-25-20 00:50 | |
| | Units/RL: | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | <50.1 | 50.1 | <50.2 | 50.2 | <50.3 | 50.3 | <50.3 | 50.3 | <50.1 | 50.1 | <50.0 | 50.0 |
| Diesel Range Organics (DRO) | | <50.1 | 50.1 | <50.2 | 50.2 | <50.3 | 50.3 | <50.3 | 50.3 | <50.1 | 50.1 | <50.0 | 50.0 |
| Motor Oil Range Hydrocarbons (MRO) | | <50.1 | 50.1 | <50.2 | 50.2 | <50.3 | 50.3 | <50.3 | 50.3 | <50.1 | 50.1 | <50.0 | 50.0 |
| Total GRO-DRO | | <50.1 | 50.1 | <50.2 | 50.2 | <50.3 | 50.3 | <50.3 | 50.3 | <50.1 | 50.1 | <50.0 | 50.0 |
| Total TPH | | <50.1 | 50.1 | <50.2 | 50.2 | <50.3 | 50.3 | <50.3 | 50.3 | <50.1 | 50.1 | <50.0 | 50.0 |



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

Jessica Kramer
Project Assistant

# Certificate of Analysis Summary 650235

## LT Environmental, Inc., Arvada, CO

## Project Name: RDU 57

**Project Id:** 034819059
**Contact:** Chris McKisson
**Project Location:** Rural Eddy County

**Date Received in Lab:** Fri Jan-24-20 12:40 pm
**Report Date:** 27-JAN-20
**Project Manager:** Jessica Kramer

| Analysis Requested | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Lab Id:* | 650235-007 | | 650235-008 | | 650235-009 | | 650235-010 | | 650235-011 | |
| | *Field Id:* | SW13 | | SW14 | | SW15 | | SW16 | | FS04 | |
| | *Depth:* | 0.5-12 ft | | 12-22 ft | | 0.5-12 ft | | 12-22 ft | | 22- ft | |
| | *Matrix:* | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | *Sampled:* | Jan-23-20 13:10 | | Jan-23-20 13:20 | | Jan-23-20 13:45 | | Jan-23-20 14:10 | | Jan-23-20 14:30 | |
| **BTEX by EPA 8021B** | *Extracted:* | Jan-24-20 15:30 | | Jan-24-20 15:30 | | Jan-24-20 15:30 | | Jan-24-20 15:30 | | Jan-24-20 15:30 | |
| | *Analyzed:* | Jan-24-20 18:34 | | Jan-24-20 18:55 | | Jan-24-20 19:15 | | Jan-24-20 19:36 | | Jan-24-20 19:56 | |
| | *Units/RL:* | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Benzene | | <0.00196 | 0.00196 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00198 | 0.00198 |
| Toluene | | <0.00196 | 0.00196 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00198 | 0.00198 |
| Ethylbenzene | | <0.00196 | 0.00196 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00198 | 0.00198 |
| m,p-Xylenes | | <0.00392 | 0.00392 | <0.00401 | 0.00401 | <0.00401 | 0.00401 | <0.00403 | 0.00403 | <0.00396 | 0.00396 |
| o-Xylene | | <0.00196 | 0.00196 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00198 | 0.00198 |
| Xylenes, Total | | <0.00196 | 0.00196 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00198 | 0.00198 |
| Total BTEX | | <0.00196 | 0.00196 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00198 | 0.00198 |
| **Chloride by EPA 300** | *Extracted:* | Jan-24-20 17:30 | | Jan-24-20 17:30 | | Jan-24-20 17:30 | | Jan-24-20 17:30 | | Jan-24-20 17:30 | |
| | *Analyzed:* | Jan-25-20 12:27 | | Jan-25-20 12:32 | | Jan-25-20 12:38 | | Jan-25-20 12:53 | | Jan-25-20 12:58 | |
| | *Units/RL:* | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 116 | 10.1 | 317 | 9.92 | 119 | 10.0 | 10.2 | 10.0 | <10.0 | 10.0 |
| **TPH by SW8015 Mod** | *Extracted:* | Jan-24-20 15:30 | | Jan-24-20 15:30 | | Jan-24-20 15:30 | | Jan-24-20 15:30 | | Jan-24-20 15:30 | |
| | *Analyzed:* | Jan-25-20 00:50 | | Jan-25-20 01:10 | | Jan-25-20 01:10 | | Jan-25-20 01:30 | | Jan-25-20 01:30 | |
| | *Units/RL:* | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | <50.2 | 50.2 | <50.1 | 50.1 | <50.3 | 50.3 | <50.2 | 50.2 | <49.9 | 49.9 |
| Diesel Range Organics (DRO) | | <50.2 | 50.2 | <50.1 | 50.1 | <50.3 | 50.3 | <50.2 | 50.2 | <49.9 | 49.9 |
| Motor Oil Range Hydrocarbons (MRO) | | <50.2 | 50.2 | <50.1 | 50.1 | <50.3 | 50.3 | <50.2 | 50.2 | <49.9 | 49.9 |
| Total GRO-DRO | | <50.2 | 50.2 | <50.1 | 50.1 | <50.3 | 50.3 | <50.2 | 50.2 | <49.9 | 49.9 |
| Total TPH | | <50.2 | 50.2 | <50.1 | 50.1 | <50.3 | 50.3 | <50.2 | 50.2 | <49.9 | 49.9 |



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

Jessica Kramer
Project Assistant

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW07** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-001 | Date Collected: | 01.23.20 10.45 | Sample Depth: | 0.5 - 12 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 16.12 | Basis: | Wet Weight |
| Seq Number: | 3114410 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **33.8** | 10.1 | mg/kg | 01.25.20 11.16 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 01.24.20 13.50 | Basis: | Wet Weight |
| Seq Number: | 3114477 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 01.27.20 10.52 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 01.27.20 10.52 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 01.27.20 10.52 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 01.27.20 10.52 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 01.27.20 10.52 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 135 | % | 70-135 | 01.27.20 10.52 | |
| o-Terphenyl | 84-15-1 | 123 | % | 70-135 | 01.27.20 10.52 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW07** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-001 | Date Collected: | 01.23.20 10.45 | Sample Depth: | 0.5 - 12 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114404 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 01.24.20 15.38 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 01.24.20 15.38 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 01.24.20 15.38 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00403 | 0.00403 | mg/kg | 01.24.20 15.38 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 01.24.20 15.38 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 01.24.20 15.38 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 01.24.20 15.38 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 106 | % | 70-130 | 01.24.20 15.38 | |
| 4-Bromofluorobenzene | 460-00-4 | 91 | % | 70-130 | 01.24.20 15.38 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW08** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-002 | Date Collected: | 01.23.20 10.50 | Sample Depth: | 12 - 23 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 16.12 | Basis: | Wet Weight |
| Seq Number: | 3114410 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **449** | 10.0 | mg/kg | 01.25.20 11.21 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 01.24.20 13.50 | Basis: | Wet Weight |
| Seq Number: | 3114477 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 01.24.20 23.11 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.2 | 50.2 | mg/kg | 01.24.20 23.11 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 01.24.20 23.11 | U | 1 |
| Total GRO-DRO | PHC628 | <50.2 | 50.2 | mg/kg | 01.24.20 23.11 | U | 1 |
| Total TPH | PHC635 | <50.2 | 50.2 | mg/kg | 01.24.20 23.11 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 108 | % | 70-135 | 01.24.20 23.11 | |
| o-Terphenyl | 84-15-1 | 99 | % | 70-135 | 01.24.20 23.11 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW08** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-002 | Date Collected: | 01.23.20 10.50 | Sample Depth: | 12 - 23 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114404 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 01.24.20 15.58 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 01.24.20 15.58 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 01.24.20 15.58 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00404 | 0.00404 | mg/kg | 01.24.20 15.58 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 01.24.20 15.58 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 01.24.20 15.58 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 01.24.20 15.58 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 94 | % | 70-130 | 01.24.20 15.58 | |
| 1,4-Difluorobenzene | 540-36-3 | 109 | % | 70-130 | 01.24.20 15.58 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW09** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-003 | Date Collected: | 01.23.20 11.05 | Sample Depth: | 0.5 - 12 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 16.12 | Basis: | Wet Weight |
| Seq Number: | 3114410 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **99.8** | 10.0 | mg/kg | 01.25.20 11.26 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114468 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.3 | 50.3 | mg/kg | 01.24.20 23.50 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.3 | 50.3 | mg/kg | 01.24.20 23.50 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.3 | 50.3 | mg/kg | 01.24.20 23.50 | U | 1 |
| Total GRO-DRO | PHC628 | <50.3 | 50.3 | mg/kg | 01.24.20 23.50 | U | 1 |
| Total TPH | PHC635 | <50.3 | 50.3 | mg/kg | 01.24.20 23.50 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 123 | % | 70-135 | 01.24.20 23.50 | |
| o-Terphenyl | 84-15-1 | 117 | % | 70-135 | 01.24.20 23.50 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW09** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-003 | Date Collected: | 01.23.20 11.05 | Sample Depth: | 0.5 - 12 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114404 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 01.24.20 17.13 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 01.24.20 17.13 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 01.24.20 17.13 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00403 | 0.00403 | mg/kg | 01.24.20 17.13 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 01.24.20 17.13 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 01.24.20 17.13 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 01.24.20 17.13 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 106 | % | 70-130 | 01.24.20 17.13 | |
| 4-Bromofluorobenzene | 460-00-4 | 93 | % | 70-130 | 01.24.20 17.13 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW010** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-004 | Date Collected: | 01.23.20 11.20 | Sample Depth: | 12 - 23 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 17.30 | Basis: | Wet Weight |
| Seq Number: | 3114414 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **14.8** | 9.96 | mg/kg | 01.25.20 12.02 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114468 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.3 | 50.3 | mg/kg | 01.25.20 00.30 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.3 | 50.3 | mg/kg | 01.25.20 00.30 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.3 | 50.3 | mg/kg | 01.25.20 00.30 | U | 1 |
| Total GRO-DRO | PHC628 | <50.3 | 50.3 | mg/kg | 01.25.20 00.30 | U | 1 |
| Total TPH | PHC635 | <50.3 | 50.3 | mg/kg | 01.25.20 00.30 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 102 | % | 70-135 | 01.25.20 00.30 | |
| o-Terphenyl | 84-15-1 | 99 | % | 70-135 | 01.25.20 00.30 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW010** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-004 | Date Collected: | 01.23.20 11.20 | Sample Depth: | 12 - 23 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114404 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 01.24.20 17.33 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 01.24.20 17.33 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 01.24.20 17.33 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 01.24.20 17.33 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 01.24.20 17.33 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 01.24.20 17.33 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 01.24.20 17.33 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 96 | % | 70-130 | 01.24.20 17.33 | |
| 1,4-Difluorobenzene | 540-36-3 | 110 | % | 70-130 | 01.24.20 17.33 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW11** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-005 | Date Collected: | 01.23.20 12.30 | Sample Depth: | 0.5 - 12 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 17.30 | Basis: | Wet Weight |
| Seq Number: | 3114414 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **32.7** | 9.92 | mg/kg | 01.25.20 12.17 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114468 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 01.25.20 00.30 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 01.25.20 00.30 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 01.25.20 00.30 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 01.25.20 00.30 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 01.25.20 00.30 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 105 | % | 70-135 | 01.25.20 00.30 | |
| o-Terphenyl | 84-15-1 | 100 | % | 70-135 | 01.25.20 00.30 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW11** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-005 | Date Collected: | 01.23.20 12.30 | Sample Depth: | 0.5 - 12 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114404 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 01.24.20 17.53 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 01.24.20 17.53 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 01.24.20 17.53 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00400 | 0.00400 | mg/kg | 01.24.20 17.53 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 01.24.20 17.53 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 01.24.20 17.53 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 01.24.20 17.53 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 95 | % | 70-130 | 01.24.20 17.53 | |
| 1,4-Difluorobenzene | 540-36-3 | 109 | % | 70-130 | 01.24.20 17.53 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW12** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-006 | Date Collected: | 01.23.20 12.40 | Sample Depth: | 12 - 23 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 17.30 | Basis: | Wet Weight |
| Seq Number: | 3114414 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **20.8** | 10.0 | mg/kg | 01.25.20 12.22 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114468 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 01.25.20 00.50 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 01.25.20 00.50 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 01.25.20 00.50 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 01.25.20 00.50 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 01.25.20 00.50 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 102 | % | 70-135 | 01.25.20 00.50 | |
| o-Terphenyl | 84-15-1 | 93 | % | 70-135 | 01.25.20 00.50 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW12** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-006 | Date Collected: | 01.23.20 12.40 | Sample Depth: | 12 - 23 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114404 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00198 | 0.00198 | mg/kg | 01.24.20 18.14 | U | 1 |
| Toluene | 108-88-3 | <0.00198 | 0.00198 | mg/kg | 01.24.20 18.14 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00198 | 0.00198 | mg/kg | 01.24.20 18.14 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00397 | 0.00397 | mg/kg | 01.24.20 18.14 | U | 1 |
| o-Xylene | 95-47-6 | <0.00198 | 0.00198 | mg/kg | 01.24.20 18.14 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00198 | 0.00198 | mg/kg | 01.24.20 18.14 | U | 1 |
| Total BTEX | | <0.00198 | 0.00198 | mg/kg | 01.24.20 18.14 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 108 | % | 70-130 | 01.24.20 18.14 | |
| 4-Bromofluorobenzene | 460-00-4 | 95 | % | 70-130 | 01.24.20 18.14 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW13** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-007 | Date Collected: | 01.23.20 13.10 | Sample Depth: | 0.5 - 12 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 17.30 | Basis: | Wet Weight |
| Seq Number: | 3114414 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **116** | 10.1 | mg/kg | 01.25.20 12.27 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114468 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 01.25.20 00.50 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.2 | 50.2 | mg/kg | 01.25.20 00.50 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 01.25.20 00.50 | U | 1 |
| Total GRO-DRO | PHC628 | <50.2 | 50.2 | mg/kg | 01.25.20 00.50 | U | 1 |
| Total TPH | PHC635 | <50.2 | 50.2 | mg/kg | 01.25.20 00.50 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 104 | % | 70-135 | 01.25.20 00.50 | |
| o-Terphenyl | 84-15-1 | 99 | % | 70-135 | 01.25.20 00.50 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW13** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-007 | Date Collected: | 01.23.20 13.10 | Sample Depth: | 0.5 - 12 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114404 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00196 | 0.00196 | mg/kg | 01.24.20 18.34 | U | 1 |
| Toluene | 108-88-3 | <0.00196 | 0.00196 | mg/kg | 01.24.20 18.34 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00196 | 0.00196 | mg/kg | 01.24.20 18.34 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00392 | 0.00392 | mg/kg | 01.24.20 18.34 | U | 1 |
| o-Xylene | 95-47-6 | <0.00196 | 0.00196 | mg/kg | 01.24.20 18.34 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00196 | 0.00196 | mg/kg | 01.24.20 18.34 | U | 1 |
| Total BTEX | | <0.00196 | 0.00196 | mg/kg | 01.24.20 18.34 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 96 | % | 70-130 | 01.24.20 18.34 | |
| 1,4-Difluorobenzene | 540-36-3 | 109 | % | 70-130 | 01.24.20 18.34 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW14** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-008 | Date Collected: | 01.23.20 13.20 | Sample Depth: | 12 - 22 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 17.30 | Basis: | Wet Weight |
| Seq Number: | 3114414 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **317** | 9.92 | mg/kg | 01.25.20 12.32 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114468 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 01.25.20 01.10 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 01.25.20 01.10 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 01.25.20 01.10 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 01.25.20 01.10 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 01.25.20 01.10 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 103 | % | 70-135 | 01.25.20 01.10 | |
| o-Terphenyl | 84-15-1 | 97 | % | 70-135 | 01.25.20 01.10 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW14** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-008 | Date Collected: | 01.23.20 13.20 | Sample Depth: | 12 - 22 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114404 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 01.24.20 18.55 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 01.24.20 18.55 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 01.24.20 18.55 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 01.24.20 18.55 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 01.24.20 18.55 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 01.24.20 18.55 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 01.24.20 18.55 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 93 | % | 70-130 | 01.24.20 18.55 | |
| 1,4-Difluorobenzene | 540-36-3 | 105 | % | 70-130 | 01.24.20 18.55 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW15** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-009 | Date Collected: | 01.23.20 13.45 | Sample Depth: | 0.5 - 12 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 17.30 | Basis: | Wet Weight |
| Seq Number: | 3114414 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **119** | 10.0 | mg/kg | 01.25.20 12.38 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114468 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.3 | 50.3 | mg/kg | 01.25.20 01.10 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.3 | 50.3 | mg/kg | 01.25.20 01.10 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.3 | 50.3 | mg/kg | 01.25.20 01.10 | U | 1 |
| Total GRO-DRO | PHC628 | <50.3 | 50.3 | mg/kg | 01.25.20 01.10 | U | 1 |
| Total TPH | PHC635 | <50.3 | 50.3 | mg/kg | 01.25.20 01.10 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 105 | % | 70-135 | 01.25.20 01.10 | |
| o-Terphenyl | 84-15-1 | 99 | % | 70-135 | 01.25.20 01.10 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW15** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-009 | Date Collected: | 01.23.20 13.45 | Sample Depth: | 0.5 - 12 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114404 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 01.24.20 19.15 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 01.24.20 19.15 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 01.24.20 19.15 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 01.24.20 19.15 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 01.24.20 19.15 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 01.24.20 19.15 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 01.24.20 19.15 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 108 | % | 70-130 | 01.24.20 19.15 | |
| 4-Bromofluorobenzene | 460-00-4 | 94 | % | 70-130 | 01.24.20 19.15 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW16** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-010 | Date Collected: | 01.23.20 14.10 | Sample Depth: | 12 - 22 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 17.30 | Basis: | Wet Weight |
| Seq Number: | 3114414 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **10.2** | 10.0 | mg/kg | 01.25.20 12.53 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114468 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 01.25.20 01.30 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.2 | 50.2 | mg/kg | 01.25.20 01.30 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 01.25.20 01.30 | U | 1 |
| Total GRO-DRO | PHC628 | <50.2 | 50.2 | mg/kg | 01.25.20 01.30 | U | 1 |
| Total TPH | PHC635 | <50.2 | 50.2 | mg/kg | 01.25.20 01.30 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 101 | % | 70-135 | 01.25.20 01.30 | |
| o-Terphenyl | 84-15-1 | 97 | % | 70-135 | 01.25.20 01.30 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW16** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-010 | Date Collected: | 01.23.20 14.10 | Sample Depth: | 12 - 22 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114404 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 01.24.20 19.36 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 01.24.20 19.36 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 01.24.20 19.36 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00403 | 0.00403 | mg/kg | 01.24.20 19.36 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 01.24.20 19.36 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 01.24.20 19.36 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 01.24.20 19.36 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 101 | % | 70-130 | 01.24.20 19.36 | |
| 1,4-Difluorobenzene | 540-36-3 | 109 | % | 70-130 | 01.24.20 19.36 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS04** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-011 | Date Collected: | 01.23.20 14.30 | Sample Depth: | 22 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 17.30 | Basis: | Wet Weight |
| Seq Number: | 3114414 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <10.0 | 10.0 | mg/kg | 01.25.20 12.58 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114468 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.9 | 49.9 | mg/kg | 01.25.20 01.30 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.9 | 49.9 | mg/kg | 01.25.20 01.30 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.9 | 49.9 | mg/kg | 01.25.20 01.30 | U | 1 |
| Total GRO-DRO | PHC628 | <49.9 | 49.9 | mg/kg | 01.25.20 01.30 | U | 1 |
| Total TPH | PHC635 | <49.9 | 49.9 | mg/kg | 01.25.20 01.30 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 104 | % | 70-135 | 01.25.20 01.30 | |
| o-Terphenyl | 84-15-1 | 100 | % | 70-135 | 01.25.20 01.30 | |

# Certificate of Analytical Results 650235

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS04** | Matrix: | Soil | Date Received: | 01.24.20 12.40 |
| Lab Sample Id: | 650235-011 | Date Collected: | 01.23.20 14.30 | Sample Depth: | 22 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.24.20 15.30 | Basis: | Wet Weight |
| Seq Number: | 3114404 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00198 | 0.00198 | mg/kg | 01.24.20 19.56 | U | 1 |
| Toluene | 108-88-3 | <0.00198 | 0.00198 | mg/kg | 01.24.20 19.56 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00198 | 0.00198 | mg/kg | 01.24.20 19.56 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00396 | 0.00396 | mg/kg | 01.24.20 19.56 | U | 1 |
| o-Xylene | 95-47-6 | <0.00198 | 0.00198 | mg/kg | 01.24.20 19.56 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00198 | 0.00198 | mg/kg | 01.24.20 19.56 | U | 1 |
| Total BTEX | | <0.00198 | 0.00198 | mg/kg | 01.24.20 19.56 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 94 | % | 70-130 | 01.24.20 19.56 | |
| 1,4-Difluorobenzene | 540-36-3 | 110 | % | 70-130 | 01.24.20 19.56 | |

# 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 650235



## LT Environmental, Inc.

RDU 57

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3114410 — Matrix: Solid — Date Prep: 01.24.20
MB Sample Id: 7695159-1-BLK — LCS Sample Id: 7695159-1-BKS — LCSD Sample Id: 7695159-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <10.0 | 250 | 246 | 98 | 247 | 99 | 90-110 | 0 | 20 | mg/kg | 01.25.20 08:57 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3114414 — Matrix: Solid — Date Prep: 01.24.20
MB Sample Id: 7695173-1-BLK — LCS Sample Id: 7695173-1-BKS — LCSD Sample Id: 7695173-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <10.0 | 250 | 244 | 98 | 246 | 98 | 90-110 | 1 | 20 | mg/kg | 01.25.20 11:52 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3114410 — Matrix: Soil — Date Prep: 01.24.20
Parent Sample Id: 650197-009 — MS Sample Id: 650197-009 S — MSD Sample Id: 650197-009 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 672 | 199 | 881 | 105 | 886 | 108 | 90-110 | 1 | 20 | mg/kg | 01.25.20 09:12 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3114410 — Matrix: Soil — Date Prep: 01.24.20
Parent Sample Id: 650230-003 — MS Sample Id: 650230-003 S — MSD Sample Id: 650230-003 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 2650 | 200 | 2780 | 65 | 2780 | 65 | 90-110 | 0 | 20 | mg/kg | 01.25.20 10:25 | X |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3114414 — Matrix: Soil — Date Prep: 01.24.20
Parent Sample Id: 650235-004 — MS Sample Id: 650235-004 S — MSD Sample Id: 650235-004 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 14.8 | 200 | 218 | 102 | 218 | 102 | 90-110 | 0 | 20 | mg/kg | 01.25.20 12:07 | |

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 650235



## LT Environmental, Inc.

RDU 57

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3114414 Matrix: Soil Date Prep: 01.24.20
Parent Sample Id: 650257-002 MS Sample Id: 650257-002 S MSD Sample Id: 650257-002 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 2980 | 201 | 3140 | 80 | 3150 | 84 | 90-110 | 0 | 20 | mg/kg | 01.25.20 13:38 | X |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3114477 Matrix: Solid Date Prep: 01.24.20
MB Sample Id: 7695142-1-BLK LCS Sample Id: 7695142-1-BKS LCSD Sample Id: 7695142-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <50.0 | 1000 | 1070 | 107 | 999 | 100 | 70-135 | 7 | 35 | mg/kg | 01.24.20 18:50 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 1040 | 104 | 1100 | 110 | 70-135 | 6 | 35 | mg/kg | 01.24.20 18:50 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 79 | | 115 | | 105 | | 70-135 | % | 01.24.20 18:50 |
| o-Terphenyl | 77 | | 102 | | 91 | | 70-135 | % | 01.24.20 18:50 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3114468 Matrix: Solid Date Prep: 01.24.20
MB Sample Id: 7695166-1-BLK LCS Sample Id: 7695166-1-BKS LCSD Sample Id: 7695166-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <50.0 | 1000 | 1160 | 116 | 969 | 97 | 70-135 | 18 | 35 | mg/kg | 01.24.20 23:30 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 1130 | 113 | 1070 | 107 | 70-135 | 5 | 35 | mg/kg | 01.24.20 23:30 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 86 | | 118 | | 95 | | 70-135 | % | 01.24.20 23:30 |
| o-Terphenyl | 84 | | 108 | | 90 | | 70-135 | % | 01.24.20 23:30 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3114477 Matrix: Solid Date Prep: 01.24.20
MB Sample Id: 7695142-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 01.24.20 18:50 | |

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 650235



## LT Environmental, Inc.

RDU 57

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3114468 Matrix: Solid Date Prep: 01.24.20
MB Sample Id: 7695166-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 01.24.20 23:30 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3114477 Matrix: Soil Date Prep: 01.24.20
Parent Sample Id: 650186-013 MS Sample Id: 650186-013 S MSD Sample Id: 650186-013 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <50.2 | 1000 | 1020 | 102 | 1020 | 102 | 70-135 | 0 | 35 | mg/kg | 01.24.20 19:30 | |
| Diesel Range Organics (DRO) | <50.2 | 1000 | 974 | 97 | 999 | 100 | 70-135 | 3 | 35 | mg/kg | 01.24.20 19:30 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 123 | | 122 | | 70-135 | % | 01.24.20 19:30 |
| o-Terphenyl | 103 | | 106 | | 70-135 | % | 01.24.20 19:30 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3114468 Matrix: Soil Date Prep: 01.24.20
Parent Sample Id: 650235-003 MS Sample Id: 650235-003 S MSD Sample Id: 650235-003 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) | <49.9 | 998 | 972 | 97 | 1010 | 101 | 70-135 | 4 | 35 | mg/kg | 01.25.20 00:10 | |
| Diesel Range Organics (DRO) | <49.9 | 998 | 931 | 93 | 1010 | 101 | 70-135 | 8 | 35 | mg/kg | 01.25.20 00:10 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 109 | | 120 | | 70-135 | % | 01.25.20 00:10 |
| o-Terphenyl | 97 | | 112 | | 70-135 | % | 01.25.20 00:10 |

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 650235



## LT Environmental, Inc.

RDU 57

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3114404 Matrix: Solid Date Prep: 01.24.20
MB Sample Id: 7695073-1-BLK LCS Sample Id: 7695073-1-BKS LCSD Sample Id: 7695073-1-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 | 0.114 | 114 | 0.113 | 113 | 70-130 | 1 | 35 | mg/kg | 01.24.20 11:13 | |
| Toluene | <0.00200 | 0.100 | 0.104 | 104 | 0.103 | 103 | 70-130 | 1 | 35 | mg/kg | 01.24.20 11:13 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.100 | 100 | 0.0985 | 99 | 71-129 | 2 | 35 | mg/kg | 01.24.20 11:13 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.196 | 98 | 0.193 | 97 | 70-135 | 2 | 35 | mg/kg | 01.24.20 11:13 | |
| o-Xylene | <0.00200 | 0.100 | 0.100 | 100 | 0.0984 | 98 | 71-133 | 2 | 35 | mg/kg | 01.24.20 11:13 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 107 | | 108 | | 108 | | 70-130 | % | 01.24.20 11:13 |
| 4-Bromofluorobenzene | 90 | | 93 | | 93 | | 70-130 | % | 01.24.20 11:13 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3114404 Matrix: Soil Date Prep: 01.24.20
Parent Sample Id: 650047-001 MS Sample Id: 650047-001 S MSD Sample Id: 650047-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | 0.100 | 0.121 | 121 | 0.118 | 118 | 70-130 | 3 | 35 | mg/kg | 01.24.20 11:54 | |
| Toluene | <0.00200 | 0.100 | 0.108 | 108 | 0.0999 | 100 | 70-130 | 8 | 35 | mg/kg | 01.24.20 11:54 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.103 | 103 | 0.0877 | 88 | 71-129 | 16 | 35 | mg/kg | 01.24.20 11:54 | |
| m,p-Xylenes | <0.00401 | 0.200 | 0.200 | 100 | 0.167 | 84 | 70-135 | 18 | 35 | mg/kg | 01.24.20 11:54 | |
| o-Xylene | <0.00200 | 0.100 | 0.102 | 102 | 0.0880 | 88 | 71-133 | 15 | 35 | mg/kg | 01.24.20 11:54 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 107 | | 108 | | 70-130 | % | 01.24.20 11:54 |
| 4-Bromofluorobenzene | 93 | | 99 | | 70-130 | % | 01.24.20 11:54 |

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

XENCO LABORATORIES

# Chain of Custody

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 Crasbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701 www.xenco.com

**Work Order No:** 650235

Page 1 of 2

| | | | |
|---|---|---|---|
| Project Manager: | Chris McKisson | Bill to: (if different) | → |
| Company Name: | LT Environmental | Company Name: | → |
| Address: | 820 Megan Ave, Unit B | Address: | |
| City, State ZIP: | Rifle, CO 81650 | City, State ZIP: | |
| Phone: | 970 285 9985 | Email: | cmckisson@ltenv.com, abyers@ltenv.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | RDU 57 | Turn Around | |
| Project Number: | 034819059 | Routine | ☒ |
| Project Location | Rural Eddy County | Rush: | |
| Sampler's Name: | Anna Byers | Due Date: | |
| PO #: | 2RP-5716 | Quote #: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes (No) | Wet Ice: | (Yes) No |
| Temperature (°C): | 1.4 | Thermometer ID | T-NM-007 |
| Received Intact: | (Yes) No | | |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | 11 |

| Lab ID | Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|---|
| | SW07 | S | 1/23/20 | 1045 | 0.5-12' | 1 | | | |
| | SW08 | | | 1050 | 12-23' | 1 | | | |
| | SW09 | | | 1105 | 0.5-12' | 1 | | | |
| | SW10 | | | 1120 | 12-23' | 1 | | | |
| | SW11 | | | 1230 | 0.5-12' | 1 | | | |
| | SW12 | | | 1240 | 12-23' | 1 | | | |
| | SW13 | | | 1310 | 0.5-12' | 1 | | | |
| | SW14 | | | 1320 | 12-22' | 1 | | | |
| | SW15 | | | 1345 | 0.5-12' | 1 | | | |
| | SW16 | | | 1410 | 12-22' | 1 | | | |

**ANALYSIS REQUEST**

**Preservative Codes**

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

**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 |
|---|---|---|---|---|---|
| Anna Byers | | 1/24/2020 12:40 | 4 | | |
| | | | 6 | | |

Revised Date 022619 Rev. 2019.1

# Chain of Custody

XENCO LABORATORIES
Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
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www.xenco.com

Work Order No: 450235

Page 2 of 2

| | | | |
|---|---|---|---|
| Project Manager: | Chris McKisson | Bill to: (if different) | → |
| Company Name: | LT Environmental | Company Name: | → |
| Address: | 820 Megan Ave, Unit B | Address: | |
| City, State ZIP: | Rifle, CO 81650 | City, State ZIP: | |
| Phone: | 970 285 9985 | Email: | cmckisson@ltenv.com, abyers@ltenv.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | RDU 57 | Turn Around | |
| Project Number: | 034819059 | Routine | ☒ |
| Project Location | Rural Eddy County | Rush: | |
| Sampler's Name: | Anna Byers | Due Date: | |
| PO #: | 2RP-5716 | Quote #: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No |
| Temperature (°C): | 1.6 | Thermometer ID | |
| Received Intact: | Yes No | | |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | |
| Sample Custody Seals: | Yes No N/A | Total Containers: | |

| Lab ID | Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Pres. Code | Number of Containers | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | FS04 | S | 1/23/20 | 1430 | 22' | | 1 | X | X | X | |

**ANALYSIS REQUEST**

**Preservative Codes**

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

**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 |
|---|---|---|---|---|---|
| Anna Byers | | 1/24/2020 12:40 | 2 | | |
| | | | 4 | | |
| | | | 6 | | |

Revised Date 022619 Rev. 2019.1

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 01.24.2020 12.40.00 PM

**Work Order #:** 650235

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

**Temperature Measuring device used : T-NM-007**

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | 1.6 |
| #2 *Shipping container in good condition? | **Yes** |
| #3 *Samples received on ice? | **Yes** |
| #4 *Custody Seals intact on shipping container/ cooler? | **Yes** |
| #5 Custody Seals intact on sample bottles? | **Yes** |
| #6*Custody Seals Signed and dated? | **Yes** |
| #7 *Chain of Custody present? | **Yes** |
| #8 Any missing/extra samples? | **No** |
| #9 Chain of Custody signed when relinquished/ received? | **Yes** |
| #10 Chain of Custody agrees with sample labels/matrix? | **Yes** |
| #11 Container label(s) legible and intact? | **Yes** |
| #12 Samples in proper container/ bottle? | **Yes** |
| #13 Samples properly preserved? | **Yes** |
| #14 Sample container(s) intact? | **Yes** |
| #15 Sufficient sample amount for indicated test(s)? | **Yes** |
| #16 All samples received within hold time? | **Yes** |
| #17 Subcontract of sample(s)? | **No** |
| #18 Water VOC samples have zero headspace? | **N/A** |

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

Analyst: PH Device/Lot#:

**Checklist completed by:** Elizabeth McClellan Date: 01.24.2020

**Checklist reviewed by:** Jessica Kramer Date: 01.27.2020

Jessica Kramer

# Analytical Report 650618

## for

## LT Environmental, Inc.

**Project Manager: Chris McKisson**

**RDU 57**

**034819059**

**30-JAN-20**

Collected By: Client


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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

30-JAN-20

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

Reference: XENCO Report No(s): **650618**
**RDU 57**
Project Address: Rural Eddy County

**Chris McKisson**:

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) 650618. 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. 650618 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

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

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

# Sample Cross Reference 650618

## LT Environmental, Inc., Arvada, CO

RDU 57

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| BH05 B | S | 01-28-20 15:45 | 24 ft | 650618-001 |

# CASE NARRATIVE

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

***Project Name: RDU 57***

Project ID: *034819059*
Work Order Number(s): *650618*

Report Date: *30-JAN-20*
Date Received: *01/29/2020*

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3114902 BTEX by EPA 8021B

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

# Certificate of Analysis Summary 650618

## LT Environmental, Inc., Arvada, CO

## Project Name: RDU 57

**Project Id:** 034819059
**Contact:** Chris McKisson
**Project Location:** Rural Eddy County

**Date Received in Lab:** Wed Jan-29-20 09:35 am
**Report Date:** 30-JAN-20
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | |
|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 650618-001 | | | | | |
| | ***Field Id:*** | BH05 B | | | | | |
| | ***Depth:*** | 24- ft | | | | | |
| | ***Matrix:*** | SOIL | | | | | |
| | ***Sampled:*** | Jan-28-20 15:45 | | | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Jan-29-20 12:00 | | | | | |
| | ***Analyzed:*** | Jan-29-20 14:00 | | | | | |
| | ***Units/RL:*** | mg/kg RL | | | | | |
| Benzene | | <0.00200 0.00200 | | | | | |
| Toluene | | <0.00200 0.00200 | | | | | |
| Ethylbenzene | | <0.00200 0.00200 | | | | | |
| m,p-Xylenes | | <0.00399 0.00399 | | | | | |
| o-Xylene | | <0.00200 0.00200 | | | | | |
| Xylenes, Total | | <0.00200 0.00200 | | | | | |
| Total BTEX | | <0.00200 0.00200 | | | | | |
| **Chloride by EPA 300** | ***Extracted:*** | Jan-29-20 13:00 | | | | | |
| | ***Analyzed:*** | Jan-29-20 17:48 | | | | | |
| | ***Units/RL:*** | mg/kg RL | | | | | |
| Chloride | | <10.0 10.0 | | | | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | Jan-29-20 13:15 | | | | | |
| | ***Analyzed:*** | Jan-29-20 13:46 | | | | | |
| | ***Units/RL:*** | mg/kg RL | | | | | |
| Gasoline Range Hydrocarbons (GRO) | | <50.1 50.1 | | | | | |
| Diesel Range Organics (DRO) | | <50.1 50.1 | | | | | |
| Motor Oil Range Hydrocarbons (MRO) | | <50.1 50.1 | | | | | |
| Total GRO-DRO | | <50.1 50.1 | | | | | |
| Total TPH | | <50.1 50.1 | | | | | |





Jessica Kramer
Project Assistant

# Certificate of Analytical Results 650618

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH05 B** | Matrix: | Soil | Date Received: | 01.29.20 09.35 |
| Lab Sample Id: | 650618-001 | Date Collected: | 01.28.20 15.45 | Sample Depth: | 24 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.29.20 13.00 | Basis: | Wet Weight |
| Seq Number: | 3114898 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <10.0 | 10.0 | mg/kg | 01.29.20 17.48 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 01.29.20 13.15 | Basis: | Wet Weight |
| Seq Number: | 3114901 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 01.29.20 13.46 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 01.29.20 13.46 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 01.29.20 13.46 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 01.29.20 13.46 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 01.29.20 13.46 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 124 | % | 70-135 | 01.29.20 13.46 | |
| o-Terphenyl | 84-15-1 | 113 | % | 70-135 | 01.29.20 13.46 | |

# Certificate of Analytical Results 650618

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH05 B** | Matrix: | Soil | Date Received: | 01.29.20 09.35 |
| Lab Sample Id: | 650618-001 | Date Collected: | 01.28.20 15.45 | Sample Depth: | 24 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.29.20 12.00 | Basis: | Wet Weight |
| Seq Number: | 3114902 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 01.29.20 14.00 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 01.29.20 14.00 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 01.29.20 14.00 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 01.29.20 14.00 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 01.29.20 14.00 | U | 1 |
| Xylenes, Total | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 01.29.20 14.00 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 01.29.20 14.00 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 104 | % | 70-130 | 01.29.20 14.00 | |
| 4-Bromofluorobenzene | 460-00-4 | 98 | % | 70-130 | 01.29.20 14.00 | |

# 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 650618



## LT Environmental, Inc.

RDU 57

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3114898 — Matrix: Solid — Date Prep: 01.29.20
MB Sample Id: 7695476-1-BLK — LCS Sample Id: 7695476-1-BKS — LCSD Sample Id: 7695476-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <10.0 | 250 | 259 | 104 | 259 | 104 | 90-110 | 0 | 20 | mg/kg | 01.29.20 17:37 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3114898 — Matrix: Soil — Date Prep: 01.29.20
Parent Sample Id: 650618-001 — MS Sample Id: 650618-001 S — MSD Sample Id: 650618-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 0.932 | 200 | 210 | 105 | 208 | 104 | 90-110 | 1 | 20 | mg/kg | 01.29.20 17:54 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3114898 — Matrix: Soil — Date Prep: 01.29.20
Parent Sample Id: 650760-005 — MS Sample Id: 650760-005 S — MSD Sample Id: 650760-005 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 1720 | 199 | 1900 | 90 | 1890 | 85 | 90-110 | 1 | 20 | mg/kg | 01.29.20 18:49 | X |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3114901 — Matrix: Solid — Date Prep: 01.29.20
MB Sample Id: 7695508-1-BLK — LCS Sample Id: 7695508-1-BKS — LCSD Sample Id: 7695508-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <50.0 | 1000 | 1110 | 111 | 1040 | 104 | 70-135 | 7 | 35 | mg/kg | 01.29.20 13:26 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 1130 | 113 | 1030 | 103 | 70-135 | 9 | 35 | mg/kg | 01.29.20 13:26 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 125 | | 134 | | 123 | | 70-135 | % | 01.29.20 13:26 |
| o-Terphenyl | 119 | | 123 | | 112 | | 70-135 | % | 01.29.20 13:26 |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3114901 — Matrix: Solid — Date Prep: 01.29.20
MB Sample Id: 7695508-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 01.29.20 13:26 | |

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 650618



## LT Environmental, Inc.

RDU 57

**Analytical Method:** TPH by SW8015 Mod | Prep Method: SW8015P
Seq Number: 3114901 | Matrix: Soil | Date Prep: 01.29.20
Parent Sample Id: 650618-001 | MS Sample Id: 650618-001 S | MSD Sample Id: 650618-001 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) | <50.3 | 1010 | 963 | 95 | 973 | 98 | 70-135 | 1 | 35 | mg/kg | 01.29.20 14:06 | |
| Diesel Range Organics (DRO) | <50.3 | 1010 | 770 | 76 | 800 | 80 | 70-135 | 4 | 35 | mg/kg | 01.29.20 14:06 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 122 | | 110 | | 70-135 | % | 01.29.20 14:06 |
| o-Terphenyl | 100 | | 97 | | 70-135 | % | 01.29.20 14:06 |

**Analytical Method:** BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3114902 | Matrix: Solid | Date Prep: 01.29.20
MB Sample Id: 7695477-1-BLK | LCS Sample Id: 7695477-1-BKS | LCSD Sample Id: 7695477-1-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 | 0.0946 | 95 | 0.100 | 100 | 70-130 | 6 | 35 | mg/kg | 01.29.20 12:18 | |
| Toluene | <0.00200 | 0.100 | 0.0922 | 92 | 0.0964 | 96 | 70-130 | 4 | 35 | mg/kg | 01.29.20 12:18 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0888 | 89 | 0.0915 | 92 | 71-129 | 3 | 35 | mg/kg | 01.29.20 12:18 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.182 | 91 | 0.187 | 94 | 70-135 | 3 | 35 | mg/kg | 01.29.20 12:18 | |
| o-Xylene | <0.00200 | 0.100 | 0.0917 | 92 | 0.0945 | 95 | 71-133 | 3 | 35 | mg/kg | 01.29.20 12:18 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 103 | | 102 | | 102 | | 70-130 | % | 01.29.20 12:18 |
| 4-Bromofluorobenzene | 98 | | 94 | | 92 | | 70-130 | % | 01.29.20 12:18 |

**Analytical Method:** BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3114902 | Matrix: Soil | Date Prep: 01.29.20
Parent Sample Id: 650618-001 | MS Sample Id: 650618-001 S | MSD Sample Id: 650618-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | 0.101 | 0.105 | 104 | 0.0932 | 93 | 70-130 | 12 | 35 | mg/kg | 01.29.20 12:59 | |
| Toluene | <0.00202 | 0.101 | 0.102 | 101 | 0.0912 | 91 | 70-130 | 11 | 35 | mg/kg | 01.29.20 12:59 | |
| Ethylbenzene | <0.00202 | 0.101 | 0.0984 | 97 | 0.0889 | 89 | 71-129 | 10 | 35 | mg/kg | 01.29.20 12:59 | |
| m,p-Xylenes | <0.00404 | 0.202 | 0.203 | 100 | 0.183 | 92 | 70-135 | 10 | 35 | mg/kg | 01.29.20 12:59 | |
| o-Xylene | <0.00202 | 0.101 | 0.101 | 100 | 0.0909 | 91 | 71-133 | 11 | 35 | mg/kg | 01.29.20 12:59 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 104 | | 102 | | 70-130 | % | 01.29.20 12:59 |
| 4-Bromofluorobenzene | 97 | | 94 | | 70-130 | % | 01.29.20 12:59 |

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference 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



Final 1.000

# Chain of Custody

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 Craslbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701
www.xenco.com

Work Order No: 450418

Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Chris McKissen | Bill to: (if different) | |
| Company Name: | LT Environmental | Company Name: | |
| Address: | 820 Megan Ave, Unit B | Address: | |
| City, State ZIP: | Rifle, CO 81650 | City, State ZIP: | |
| Phone: | 970 285 9985 | Email: | cmckissen@ltenv.com & abyers@ltenv.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | RDU 57 | Turn Around | |
| Project Number: | 034819059 | Routine | ☒ |
| Project Location | Rural Eddy County | Rush: | |
| Sampler's Name: | Anna Byers | Due Date: | |
| PO #: | 2RP-5716 | Quote #: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Temperature (°C): | 1.0 | Thermometer ID | TNM007 |
| Received Intact: | (Yes) No | | |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | 1 |

| Lab ID | Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | Pres. Code | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | BH05B | S | 1/28/20 | 1545 | 24' | 1 | | X | X | X | |

**ANALYSIS REQUEST**

**Preservative Codes**

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

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 |
|---|---|---|---|---|---|
| Anna Byers | | 1/29/20 09:35 | 2 | | |
| | | | 4 | | |
| | | | 6 | | |

Revised Date 022619 Rev. 2019.1

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 01.29.2020 09.35.00 AM

**Work Order #:** 650618

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

**Temperature Measuring device used : T-NM-007**

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

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

Analyst: PH Device/Lot#:

**Checklist completed by:** Elizabeth McClellan Date: 01.29.2020

**Checklist reviewed by:** Date: 01.29.2020

# Analytical Report 652491

## for

## LT Environmental, Inc.

**Project Manager: Chris McKisson**

**RDU 57**

**0.34819059**

**17-FEB-20**

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

17-FEB-20

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

Reference: XENCO Report No(s): **652491**
**RDU 57**
Project Address: Rural Eddy County

**Chris McKisson**:

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) 652491. 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. 652491 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

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

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

# Sample Cross Reference 652491

## LT Environmental, Inc., Arvada, CO

RDU 57

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| SW18 | S | 02-14-20 11:30 | 0.5 - 4 ft | 652491-001 |
| SW19 | S | 02-14-20 12:20 | 4 - 12 ft | 652491-002 |

# CASE NARRATIVE

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

***Project Name: RDU 57***

Project ID: *0.34819059*
Work Order Number(s): *652491*

Report Date: *17-FEB-20*
Date Received: *02/14/2020*

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3116666 BTEX by EPA 8021B

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

# Certificate of Analysis Summary 652491

## LT Environmental, Inc., Arvada, CO

## Project Name: RDU 57

**Project Id:** 0.34819059
**Contact:** Chris McKisson
**Project Location:** Rural Eddy County

**Date Received in Lab:** Fri Feb-14-20 02:30 pm
**Report Date:** 17-FEB-20
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 652491-001 | | | | 652491-002 | | | | | | | |
| | ***Field Id:*** | SW18 | | | | SW19 | | | | | | | |
| | ***Depth:*** | 0.5-4 ft | | | | 4-12 ft | | | | | | | |
| | ***Matrix:*** | SOIL | | | | SOIL | | | | | | | |
| | ***Sampled:*** | Feb-14-20 11:30 | | | | Feb-14-20 12:20 | | | | | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Feb-14-20 17:09 | | | | Feb-14-20 17:09 | | | | | | | |
| | ***Analyzed:*** | Feb-15-20 02:16 | | | | Feb-15-20 02:37 | | | | | | | |
| | ***Units/RL:*** | mg/kg | RL | | | mg/kg | RL | | | | | | |
| Benzene | | <0.000482 | 0.000482 | | | <0.00240 | 0.00240 | | | | | | |
| Toluene | | <0.000524 | 0.000524 | | | <0.00261 | 0.00261 | | | | | | |
| Ethylbenzene | | <0.000403 | 0.000403 | | | <0.00201 | 0.00201 | | | | | | |
| m,p-Xylenes | | <0.000748 | 0.000748 | | | <0.00373 | 0.00373 | | | | | | |
| o-Xylene | | <0.000400 | 0.000400 | | | <0.00200 | 0.00200 | | | | | | |
| Total Xylenes | | <0.000400 | 0.000400 | | | <0.00200 | 0.00200 | | | | | | |
| Total BTEX | | <0.000400 | 0.000400 | | | <0.00200 | 0.00200 | | | | | | |
| **Chloride by EPA 300** | ***Extracted:*** | Feb-14-20 16:30 | | | | Feb-14-20 16:30 | | | | | | | |
| | ***Analyzed:*** | Feb-14-20 19:42 | | | | Feb-14-20 20:00 | | | | | | | |
| | ***Units/RL:*** | mg/kg | RL | | | mg/kg | RL | | | | | | |
| Chloride | | 16.5 | 0.352 | | | 2780 | 1.76 | | | | | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | Feb-14-20 17:00 | | | | Feb-14-20 17:00 | | | | | | | |
| | ***Analyzed:*** | Feb-14-20 21:19 | | | | Feb-14-20 21:39 | | | | | | | |
| | ***Units/RL:*** | mg/kg | RL | | | mg/kg | RL | | | | | | |
| Gasoline Range Hydrocarbons (GRO) | | <13.9 | 13.9 | | | 18.7 J | 13.8 | | | | | | |
| Diesel Range Organics (DRO) | | <11.5 | 11.5 | | | 205 | 11.4 | | | | | | |
| Motor Oil Range Hydrocarbons (MRO) | | <11.5 | 11.5 | | | 28.2 J | 11.4 | | | | | | |
| Total TPH | | <11.5 | 11.5 | | | 252 | 11.4 | | | | | | |





Version: 1.%

Jessica Kramer
Project Assistant

# Certificate of Analytical Results 652491

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW18** | Matrix: | Soil | Date Received: | 02.14.20 14.30 |
| Lab Sample Id: | 652491-001 | Date Collected: | 02.14.20 11.30 | Sample Depth: | 0.5 - 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 02.14.20 16.30 | Basis: | Wet Weight |
| Seq Number: | 3116675 | | | | |

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **16.5** | 9.94 | 0.352 | mg/kg | 02.14.20 19.42 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 02.14.20 17.00 | Basis: | Wet Weight |
| Seq Number: | 3116690 | | | | |

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <13.9 | 50.1 | 13.9 | mg/kg | 02.14.20 21.19 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <11.5 | 50.1 | 11.5 | mg/kg | 02.14.20 21.19 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <11.5 | 50.1 | 11.5 | mg/kg | 02.14.20 21.19 | U | 1 |
| Total TPH | PHC635 | <11.5 | 50.1 | 11.5 | mg/kg | 02.14.20 21.19 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 98 | % | 70-135 | 02.14.20 21.19 | |
| o-Terphenyl | 84-15-1 | 109 | % | 70-135 | 02.14.20 21.19 | |

# Certificate of Analytical Results 652491

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW18** | Matrix: | Soil | Date Received: | 02.14.20 14.30 |
| Lab Sample Id: | 652491-001 | Date Collected: | 02.14.20 11.30 | Sample Depth: | 0.5 - 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 02.14.20 17.09 | Basis: | Wet Weight |
| Seq Number: | 3116666 | | | | |

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000482 | 0.00198 | 0.000482 | mg/kg | 02.15.20 02.16 | U | 1 |
| Toluene | 108-88-3 | <0.000524 | 0.00198 | 0.000524 | mg/kg | 02.15.20 02.16 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000403 | 0.00198 | 0.000403 | mg/kg | 02.15.20 02.16 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.000748 | 0.00397 | 0.000748 | mg/kg | 02.15.20 02.16 | U | 1 |
| o-Xylene | 95-47-6 | <0.000400 | 0.00198 | 0.000400 | mg/kg | 02.15.20 02.16 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000400 | 0.00198 | 0.000400 | mg/kg | 02.15.20 02.16 | U | 1 |
| Total BTEX | | <0.000400 | 0.00198 | 0.000400 | mg/kg | 02.15.20 02.16 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 97 | % | 70-130 | 02.15.20 02.16 | |
| 4-Bromofluorobenzene | 460-00-4 | 88 | % | 70-130 | 02.15.20 02.16 | |

# Certificate of Analytical Results 652491

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW19** | Matrix: | Soil | Date Received: | 02.14.20 14.30 |
| Lab Sample Id: | 652491-002 | Date Collected: | 02.14.20 12.20 | Sample Depth: | 4 - 12 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 02.14.20 16.30 | Basis: | Wet Weight |
| Seq Number: | 3116675 | | | | |

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **2780** | 49.6 | 1.76 | mg/kg | 02.14.20 20.00 | | 5 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 02.14.20 17.00 | Basis: | Wet Weight |
| Seq Number: | 3116690 | | | | |

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **18.7** | 49.8 | 13.8 | mg/kg | 02.14.20 21.39 | J | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **205** | 49.8 | 11.4 | mg/kg | 02.14.20 21.39 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **28.2** | 49.8 | 11.4 | mg/kg | 02.14.20 21.39 | J | 1 |
| **Total TPH** | PHC635 | **252** | 49.8 | 11.4 | mg/kg | 02.14.20 21.39 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 102 | % | 70-135 | 02.14.20 21.39 | |
| o-Terphenyl | 84-15-1 | 102 | % | 70-135 | 02.14.20 21.39 | |

# Certificate of Analytical Results 652491

## LT Environmental, Inc., Arvada, CO

RDU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW19** | Matrix: | Soil | Date Received: | 02.14.20 14.30 |
| Lab Sample Id: | 652491-002 | Date Collected: | 02.14.20 12.20 | Sample Depth: | 4 - 12 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 02.14.20 17.09 | Basis: | Wet Weight |
| Seq Number: | 3116666 | | | | |

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00240 | 0.00990 | 0.00240 | mg/kg | 02.15.20 02.37 | U | 1 |
| Toluene | 108-88-3 | <0.00261 | 0.00990 | 0.00261 | mg/kg | 02.15.20 02.37 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00990 | 0.00201 | mg/kg | 02.15.20 02.37 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00373 | 0.0198 | 0.00373 | mg/kg | 02.15.20 02.37 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00990 | 0.00200 | mg/kg | 02.15.20 02.37 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00990 | 0.00200 | mg/kg | 02.15.20 02.37 | U | 1 |
| Total BTEX | | <0.00200 | 0.00990 | 0.00200 | mg/kg | 02.15.20 02.37 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 97 | % | 70-130 | 02.15.20 02.37 | |
| 1,4-Difluorobenzene | 540-36-3 | 107 | % | 70-130 | 02.15.20 02.37 | |

# Flagging Criteria

**X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

**B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

**D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

**E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

**F** RPD exceeded lab control limits.

**J** The target analyte was positively identified below the quantitation limit and above the detection limit.

**U** Analyte was not detected.

**L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

**H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

**K** Sample analyzed outside of recommended hold time.

**JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

**PQL** Practical Quantitation Limit **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 652491



## LT Environmental, Inc.

RDU 57

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3116675 — Matrix: Solid — Date Prep: 02.14.20
MB Sample Id: 7696717-1-BLK — LCS Sample Id: 7696717-1-BKS — LCSD Sample Id: 7696717-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.354 | 250 | 259 | 104 | 259 | 104 | 90-110 | 0 | 20 | mg/kg | 02.14.20 19:30 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3116675 — Matrix: Soil — Date Prep: 02.14.20
Parent Sample Id: 652447-009 — MS Sample Id: 652447-009 S — MSD Sample Id: 652447-009 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 5910 | 202 | 6090 | 89 | 6110 | 99 | 90-110 | 0 | 20 | mg/kg | 02.14.20 20:59 | X |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3116675 — Matrix: Soil — Date Prep: 02.14.20
Parent Sample Id: 652491-001 — MS Sample Id: 652491-001 S — MSD Sample Id: 652491-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 16.5 | 200 | 224 | 104 | 226 | 105 | 90-110 | 1 | 20 | mg/kg | 02.14.20 19:48 | |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3116690 — Matrix: Solid — Date Prep: 02.14.20
MB Sample Id: 7696775-1-BLK — LCS Sample Id: 7696775-1-BKS — LCSD Sample Id: 7696775-1-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) | <13.9 | 1000 | 890 | 89 | 882 | 88 | 70-135 | 1 | 35 | mg/kg | 02.14.20 21:00 | |
| Diesel Range Organics (DRO) | <11.5 | 1000 | 942 | 94 | 1020 | 102 | 70-135 | 8 | 35 | mg/kg | 02.14.20 21:00 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 96 | | 106 | | 112 | | 70-135 | % | 02.14.20 21:00 |
| o-Terphenyl | 100 | | 105 | | 107 | | 70-135 | % | 02.14.20 21:00 |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3116690 — Matrix: Solid — Date Prep: 02.14.20
MB Sample Id: 7696775-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <11.5 | mg/kg | 02.17.20 10:51 | |

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 652491



## LT Environmental, Inc.

RDU 57

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3116690 Matrix: Soil Date Prep: 02.14.20
Parent Sample Id: 652491-001 MS Sample Id: 652491-001 S MSD Sample Id: 652491-001 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) | <13.8 | 997 | 926 | 93 | 905 | 91 | 70-135 | 2 | 35 | mg/kg | 02.14.20 21:19 | |
| Diesel Range Organics (DRO) | <11.4 | 997 | 1050 | 105 | 995 | 100 | 70-135 | 5 | 35 | mg/kg | 02.14.20 21:19 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 115 | | 109 | | 70-135 | % | 02.14.20 21:19 |
| o-Terphenyl | 111 | | 115 | | 70-135 | % | 02.14.20 21:19 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3116666 Matrix: Solid Date Prep: 02.14.20
MB Sample Id: 7696733-1-BLK LCS Sample Id: 7696733-1-BKS LCSD Sample Id: 7696733-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000486 | 0.100 | 0.109 | 109 | 0.106 | 106 | 70-130 | 3 | 35 | mg/kg | 02.14.20 23:13 | |
| Toluene | <0.000528 | 0.100 | 0.0984 | 98 | 0.0970 | 97 | 70-130 | 1 | 35 | mg/kg | 02.14.20 23:13 | |
| Ethylbenzene | <0.000406 | 0.100 | 0.0934 | 93 | 0.0922 | 92 | 71-129 | 1 | 35 | mg/kg | 02.14.20 23:13 | |
| m,p-Xylenes | <0.000754 | 0.200 | 0.182 | 91 | 0.180 | 90 | 70-135 | 1 | 35 | mg/kg | 02.14.20 23:13 | |
| o-Xylene | <0.000403 | 0.100 | 0.0929 | 93 | 0.0919 | 92 | 71-133 | 1 | 35 | mg/kg | 02.14.20 23:13 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 110 | | 108 | | 109 | | 70-130 | % | 02.14.20 23:13 |
| 4-Bromofluorobenzene | 94 | | 90 | | 90 | | 70-130 | % | 02.14.20 23:13 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3116666 Matrix: Soil Date Prep: 02.14.20
Parent Sample Id: 652450-011 MS Sample Id: 652450-011 S MSD Sample Id: 652450-011 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000483 | 0.0994 | 0.115 | 116 | 0.105 | 105 | 70-130 | 9 | 35 | mg/kg | 02.14.20 23:54 | |
| Toluene | <0.000525 | 0.0994 | 0.106 | 107 | 0.0972 | 97 | 70-130 | 9 | 35 | mg/kg | 02.14.20 23:54 | |
| Ethylbenzene | <0.000404 | 0.0994 | 0.102 | 103 | 0.0938 | 94 | 71-129 | 8 | 35 | mg/kg | 02.14.20 23:54 | |
| m,p-Xylenes | <0.000749 | 0.199 | 0.199 | 100 | 0.183 | 92 | 70-135 | 8 | 35 | mg/kg | 02.14.20 23:54 | |
| o-Xylene | <0.000401 | 0.0994 | 0.101 | 102 | 0.0940 | 94 | 71-133 | 7 | 35 | mg/kg | 02.14.20 23:54 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 108 | | 108 | | 70-130 | % | 02.14.20 23:54 |
| 4-Bromofluorobenzene | 93 | | 94 | | 70-130 | % | 02.14.20 23:54 |

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

XENCO LABORATORIES

# Chain of Custody

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 Craslbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701 www.xenco.com

**Work Order No:** 652491

Page 1 of 1

| | | | |
|---|---|---|---|
| **Project Manager:** | Chris McKisson | **Bill to: (if different)** | |
| **Company Name:** | LT Environmental | **Company Name:** | |
| **Address:** | 820 Megan Ave, Unit B | **Address:** | |
| **City, State ZIP:** | Rifle, CO 81650 | **City, State ZIP:** | |
| **Phone:** | 970 285 9985 | **Email:** | cmckisson@ltenv.com + abyers@ltenv.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| **Project Name:** | RDU 57 | **Turn Around** | |
| **Project Number:** | 03481905 9 | Routine ☐ | |
| **Project Location** | Rural Eddy County | Rush: 24 HR | |
| **Sampler's Name:** | Anna Byers | Due Date: | |
| **PO #:** | 2RP-5716 | **Quote #:** | |

| **SAMPLE RECEIPT** | | | |
|---|---|---|---|
| **Temp Blank:** | Yes No | **Wet Ice:** | Yes No |
| **Temperature (°C):** | 0.6 | **Thermometer ID** | TPM07 |
| **Received Intact:** | (Yes) No | | |
| **Cooler Custody Seals:** | Yes No N/A | **Correction Factor:** | -0.2 |
| **Sample Custody Seals:** | Yes No N/A | **Total Containers:** | 2 |

| Lab ID | Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | Pres. Code | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|---|---|
| | SW18 | S | 2/14/20 | 1130 | 0.5-4' | 1 | | X | X | X |
| | SW19 | S | 2/14/20 | 1220 | 4-12' | 1 | | X | X | X |

**ANALYSIS REQUEST**

**Preservative Codes**

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

**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 |
|---|---|---|---|---|---|
| Anna Byers | | 02-14-20 1430 | 2 | | |
| | | | 4 | | |
| | | | 6 | | |

Revised Date 022619 Rev. 2019.1

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 02/14/2020 02:30:00 PM

**Work Order #:** 652491

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

**Temperature Measuring device used : T NM07**

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

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

Analyst: PH Device/Lot#:

**Checklist completed by:** Martha Castro Date: 02/14/2020

**Checklist reviewed by:** Jessica Kramer Date: 02/17/2020