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

March 10, 2020

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

**RE: Deferral Request**
**Poker Lake Unit Big Sinks 11 Federal Battery**
**Remediation Permit Number 2RP-3887**
**Eddy County, New Mexico**

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following report detailing site assessment, soil sampling, and excavation activities at the Poker Lake Unit (PLU) Big Sinks 11 Federal Battery (Site) in Unit P, Section 11, Township 24 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment, soil sampling, and excavation activities was to address impacts to soil resulting from a crude oil release at the Site. Based on the results of the soil sampling events, XTO is submitting this Deferral Request, describing remediation that has occurred and requesting deferral of final remediation.

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

## RELEASE BACKGROUND

On September 13, 2016, a Victaulic check valve cap failed on the LACT unit, causing approximately 79 barrels (bbls) of crude oil to release onto the surface of the well pad. A vacuum truck recovered approximately 42 bbls of oil from the ground surface. The former operator reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on September 14, 2016, and was assigned Remediation Permit (RP) Number 2RP-3887 (Attachment 1).

## SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the NMAC. Depth to groundwater at the Site is estimated to be between greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is United States Geological Survey (USGS) well 321334103494901, located approximately 4,955 feet east of the Site. The water well has a depth to groundwater of approximately 367 feet bgs and a total depth of 500 feet bgs. Ground surface elevation at the water well location is 3,522 feet above mean sea level (AMSL), which is approximately 43 feet higher in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is an intermittent stream approximately 250 feet north of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a low-potential karst area.

## CLOSURE CRITERIA

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

- Benzene: 10 milligrams per kilogram (mg/kg);
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg;
- Total petroleum hydrocarbons (TPH): 100 mg/kg; and
- Chloride: 600 mg/kg.

## SITE ASSESSMENT, EXCAVATION, AND DELINEATION SOIL SAMPLING ACTIVITIES

On February 13, 2018, LTE personnel inspected the Site to evaluate the release extent. Surficial hydrocarbon staining was observed in the release area. An LTE scientist collected eight preliminary soil samples (SS01 through SS08) within the release area to assess the lateral extent of impacted soil. The soil sample locations, depicted on Figure 2, were selected based on information provided on the initial Form C-141 and field observations. To eliminate the effects from weathering and natural degradation of contaminants at the ground surface, the soil samples were collected from each sample location from a depth of 0.5 feet bgs.

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

Environmental Protection Agency (USEPA) Method 8021B; TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0. The soil sample locations are depicted on Figure 2.

During March and December 2019, LTE personnel returned to the Site to oversee excavation and delineation activities.

Impacted soil was excavated from the release area as indicated by visual observations, field screening activities, and laboratory analytical results for the preliminary soil samples. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach© chloride QuanTab© test strips, respectively. Impacted soil was excavated to depths ranging from 1 foot to 7 feet bgs. Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples SW01 through SW18 were collected from the sidewalls of the excavation from depths ranging from ground surface to 6 feet bgs. Composite soil samples FS01 through FS26, FS09A, FS10A, FS15A, FS16A, and FS18A were collected from the floor of the excavation from depths ranging from 1 foot to 7 feet bgs. The excavation extent and excavation soil sample locations are depicted on Figure 3.

Further excavation of impacted soil to the east was limited by the presence of active production equipment and pipelines. Potholes were advanced via backhoe at five locations around the production equipment to delineate the maximum extent of impacted soil left in place. Potholes PH01 through PH05 were advanced to a depth of 8 feet bgs. Delineation soil samples were collected from each pothole at depths ranging from 2 foot to 8 feet bgs. Soil from the potholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for each pothole were logged on lithologic/soil sampling logs, which are included in Attachment 2. The pothole delineation soil sample locations are depicted on Figure 4.

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

The excavation measured approximately 9,000 square feet in area with a depth of 1 foot to 7 feet bgs. A total of approximately 1,700 cubic yards of impacted soil were removed from the excavation. The impacted soil was transported and properly disposed of at the R360 Landfill located in Hobbs, New Mexico.

## ANALYTICAL RESULTS

Laboratory analytical results indicated that TPH concentrations exceeded the Closure Criteria in preliminary soil samples SS01 through SS08. Based on visible surface staining and laboratory analytical results for the preliminary soil samples, excavation and delineation of impacted soil was conducted.

Laboratory analytical results indicated that TPH concentrations initially exceeded the Closure Criteria in excavation sidewall samples SW01 through SW03, SW05 through SW07, SW09, SW16 through SW18, and excavation floor samples FS01 through FS04, FS09, FS10/FS10A, FS15, FS16, and FS18. Additional impacted soil was removed from these areas, to the extent possible. Laboratory analytical results indicated that BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria in final excavation sidewall samples SW04, SW08, and SW10 through SW15 and final excavation floor samples FS05 through FS08, FS09A, FS11 through FS14, FS15A, FS16A, FS17, FS18A, and FS19 through FS26.

Further excavation of impacted soil beyond sidewall samples SW06, SW07, and SW16 through SW18 was limited by the presence of active production equipment and pipelines. XTO safety policy restricts soil disturbing activities to a 2 foot radius of any active production equipment and pipelines. This XTO safety policy is established to protect workers and reduce the likelihood of compromising the foundation of the process equipment. This policy was enforced on the eastern excavation sidewall where impacted soil was identified within 2 feet of active production equipment and pipelines in excavation sidewall samples SW06, SW07, and SW16 through SW18.

Potholes PH01 through PH05 were advanced around the production equipment to delineate the maximum extent of impacted soil left in place. Laboratory analytical results for the delineation soil samples collected from potholes PH01 through PH05 indicated that BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria. Based on the laboratory analytical results for the pothole soil samples, the lateral and vertical extent of impacted soil was delineated.

The laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 4.

## DEFERRAL REQUEST

A total of approximately 1,700 cubic yards of impacted soil were excavated from the Site; however, residual impacted soil was left in place for compliance with the XTO safety policy regarding earth moving activities within 2 feet of active production equipment and pipelines. Impacted soil was excavated to the extent possible. Laboratory analytical results for excavation sidewall samples SW06, SW07, and SW16 through SW18, collected at depths ranging from the ground surface to 6 feet bgs, indicated that soil with TPH concentrations exceeding the Closure

Criteria was left in place within 2 feet of active production equipment and pipelines. The impacted soil remaining in place is delineated vertically and laterally by excavation soil samples SW11, SW15, FS05, FS06, FS16A, FS17, FS18A, and FS19, collected from the sidewalls and floor of the final excavation extent, and the delineation soil samples collected from potholes PH01 through PH05. An estimated 800 cubic yards of impacted soil remains in place, assuming a maximum 7 foot depth based on the excavation and delineation soil samples listed above collected from depths of 0 to 8 feet bgs, that were compliant with the Closure Criteria. Upon completion of excavation activities, a 10% solution of MicroBlaze®, a concentrated solution of microbes, nutrients, and surfactants designed to bioremediate petroleum hydrocarbons, was applied to the sidewalls and floor of the excavation to enhance remediation of residual hydrocarbons.

XTO backfilled the excavation and requests to complete final remediation during any future major construction/alteration or final plugging and abandonment, whichever occurs first. LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. The majority of the released fluids were recovered during initial response activities and no saturated soil remains in-place. XTO requests deferral of final remediation for RP Number 2RP-3887. An updated NMOCD Form C-141 is included as Attachment 1.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Aimee Cole
Project Environmental Scientist

Ashley L. Ager, P.G.
Senior Geologist

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

Attachments:

Figure 1 Site Location Map
Figure 2 Preliminary Soil Sample Locations
Figure 3 Excavation Soil Sample Locations

| | |
|---|---|
| Figure 4 | Delineation Soil Sample Locations |
| Table 1 | Soil Analytical Results |
| Attachment 1 | Initial/Final NMOCD Form C-141 (2RP-3887) |
| Attachment 2 | Lithologic / Soil Sample Logs |
| Attachment 3 | Photographic Log |
| Attachment 4 | Laboratory Analytical Reports |

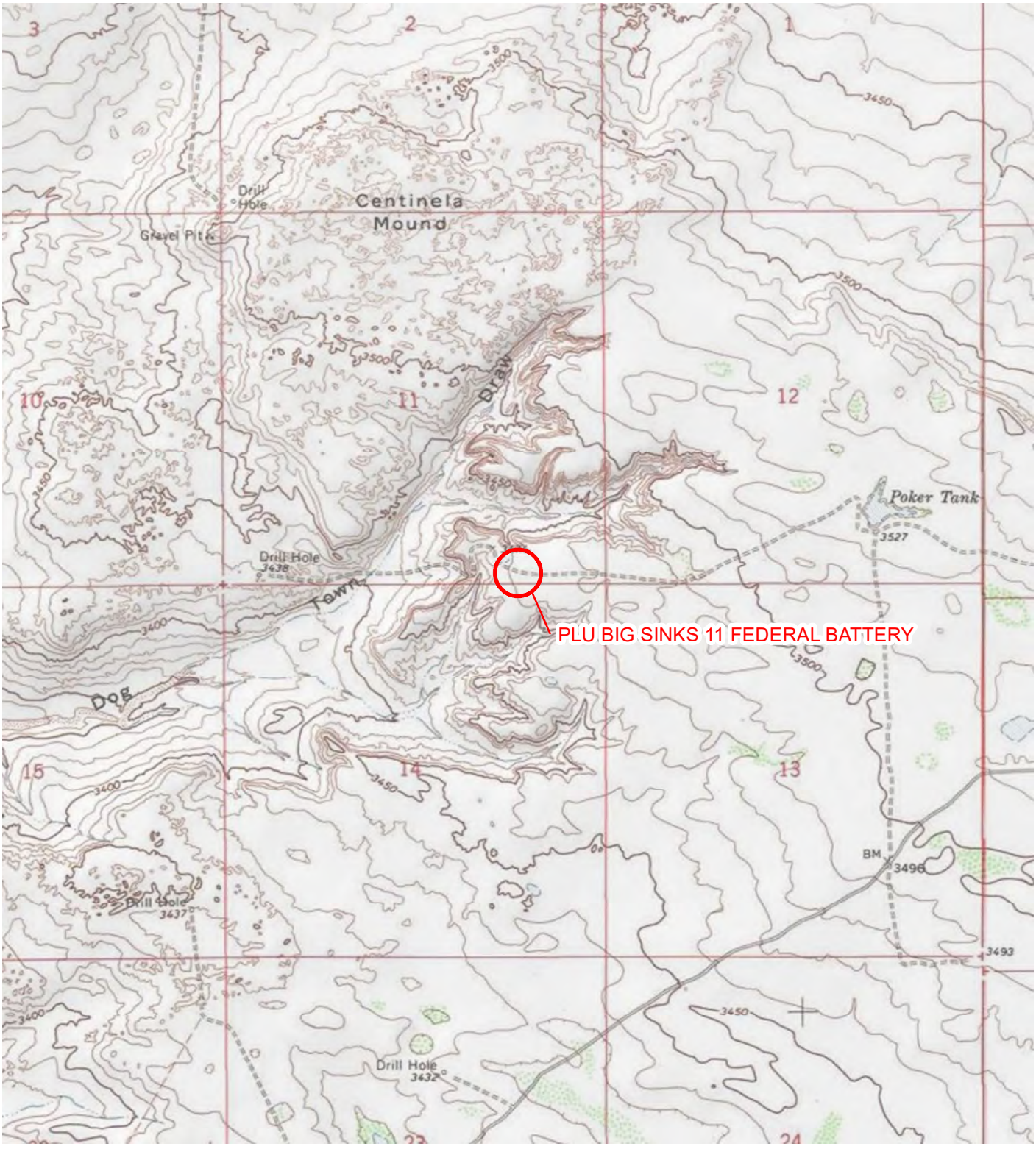


IMAGE COURTESY OF ESRI/USGS

**LEGEND**

SITE LOCATION

0 2,000 4,000

Feet

N


NOTE: REMEDIATION PERMIT NUMBER 2RP-3887

FIGURE 1
SITE LOCATION MAP
PLU BIG SINKS 11 FEDERAL BATTERY
UNIT P SEC 11 T24S R30E
EDDY COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

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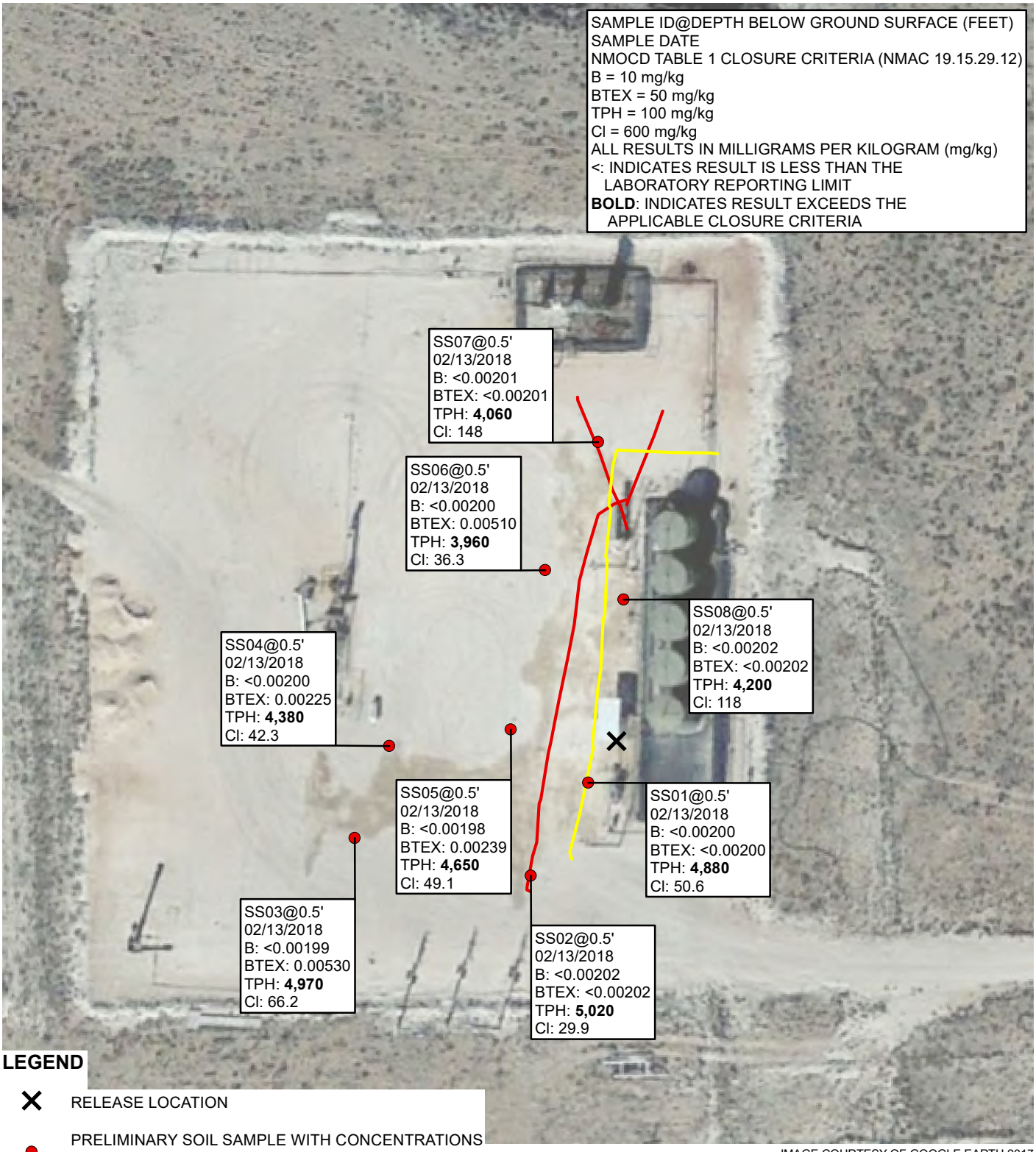


B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-3887

FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
PLU BIG SINKS 11 FEDERAL BATTERY
UNIT P SEC 11 T24S R30E
EDDY COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

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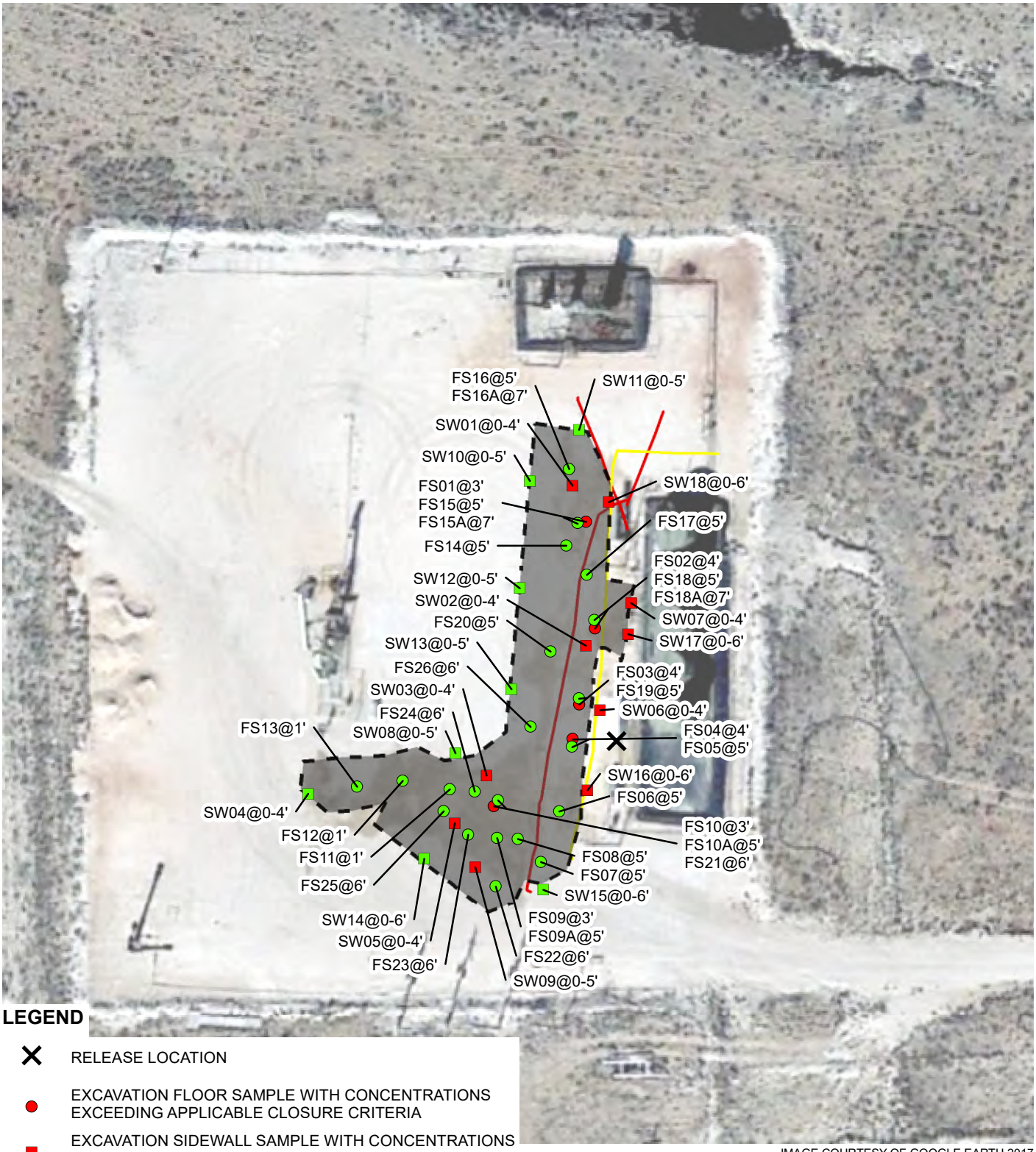


IMAGE COURTESY OF GOOGLE EARTH 2017

**LEGEND**

- RELEASE LOCATION
- EXCAVATION FLOOR SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE CLOSURE CRITERIA
- EXCAVATION SIDEWALL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE CLOSURE CRITERIA
- EXCAVATION FLOOR SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- EXCAVATION SIDEWALL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- ELECTRIC LINE
- GAS LINE
- EXCAVATION EXTENT

NOTE: REMEDIATION PERMIT NUMBER 2RP-3887

0 60 120
Feet

N

FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
PLU BIG SINKS 11 FEDERAL BATTERY
UNIT P SEC 11 T24S R30E
EDDY COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

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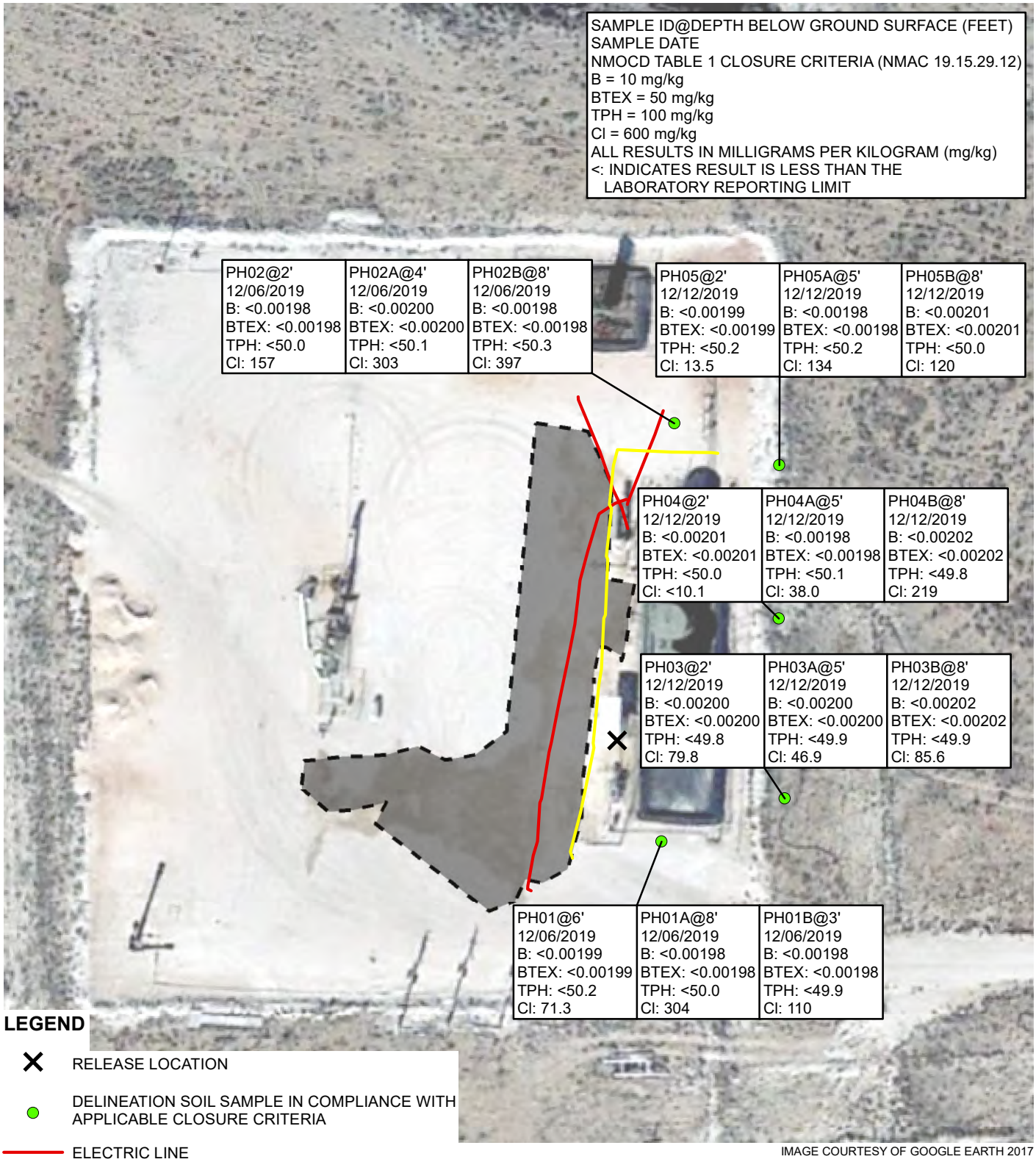


**LEGEND**

- RELEASE LOCATION
- DELINEATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- ELECTRIC LINE
- GAS LINE
- EXCAVATION EXTENT

B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-3887

IMAGE COURTESY OF GOOGLE EARTH 2017

0 60 120
Feet

N

FIGURE 4
DELINEATION SOIL SAMPLE LOCATIONS
PLU BIG SINKS 11 FEDERAL BATTERY
UNIT P SEC 11 T24S R30E
EDDY COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

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

**PLU BIG SINKS 11 FEDERAL BATTERY**
**REMEDIATION PERMIT NUMBER 2RP-3887**
**EDDY COUNTY, NEW MEXICO**
**XTO ENERGY, INC.**

| Sample Name | Sample Depth (feet bgs) | Sample Date | Benzene (mg/kg) | Toluene (mg/kg) | Ethyl-benzene (mg/kg) | Total Xylenes (mg/kg) | Total BTEX (mg/kg) | GRO (mg/kg) | DRO (mg/kg) | ORO (mg/kg) | Total GRO+DRO (mg/kg) | TPH (mg/kg) | Chloride (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NMOCD Table 1 Closure Criteria** | | | **10** | NE | NE | NE | **50** | NE | NE | NE | NE | **100** | **600** |
| SS01 | 0.5 | 02/13/2018 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <74.9 | 4,180 | 697 | 4,180 | **4,880** | 50.6 |
| SS02 | 0.5 | 02/13/2018 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <74.9 | 4,320 | 699 | 4,320 | **5,020** | 29.9 |
| SS03 | 0.5 | 02/13/2018 | <0.00199 | 0.00243 | <0.00199 | 0.00287 | 0.00530 | <74.7 | 4,260 | 705 | 4,260 | **4,970** | 66.2 |
| SS04 | 0.5 | 02/13/2018 | <0.00200 | <0.00200 | <0.00200 | 0.00225 | 0.00225 | 107 | 3,680 | 593 | 3,790 | **4,380** | 42.3 |
| SS05 | 0.5 | 02/13/2018 | <0.00198 | <0.00198 | <0.00198 | 0.00239 | 0.00239 | <74.7 | 3,990 | 663 | 3,990 | **4,650** | 49.1 |
| SS06 | 0.5 | 02/13/2018 | <0.00200 | 0.00228 | <0.00200 | 0.00282 | 0.00510 | <74.9 | 3,400 | 562 | 3,400 | **3,960** | 36.3 |
| SS07 | 0.5 | 02/13/2018 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <74.9 | 3,520 | 544 | 3,520 | **4,060** | 148 |
| SS08 | 0.5 | 02/13/2018 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <74.8 | 3,600 | 599 | 3,600 | **4,200** | 118 |
| SW01 | 0 - 4 | 03/29/2019 | <0.00199 | 0.00266 | <0.00199 | 0.00824 | 0.0109 | 20.0 | 792 | 128 | 812 | **940** | 64.5 |
| SW02 | 0 - 4 | 03/29/2019 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <14.9 | 404 | 79.2 | 404 | **483** | 70.2 |
| SW03 | 0 - 4 | 03/29/2019 | <0.00199 | <0.00199 | <0.00199 | 0.00798 | 0.00798 | 19.9 | 629 | 92.8 | 649 | **742** | 9.58 |
| SW04 | 0 - 4 | 03/29/2019 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <15.0 | 56.6 | <15.0 | 56.6 | 56.6 | 44.9 |
| SW05 | 0 - 4 | 03/29/2019 | <0.00200 | 0.00286 | <0.00200 | 0.0368 | 0.0397 | 66.5 | 838 | 123 | 905 | **1,030** | 5.19 |
| SW06 | 0 - 4 | 03/29/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <15.0 | 221 | 28.4 | 221 | **249** | 13.6 |
| SW07 | 0 - 4 | 03/29/2019 | <0.00201 | 0.0108 | 0.00865 | 0.119 | 0.138 | 127 | 1,820 | 259 | 1,950 | **2,210** | 23.8 |
| SW08 | 0 - 5 | 12/03/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.3 | <50.3 | <50.3 | <50.3 | <50.3 | <10.1 |
| SW09 | 0 - 5 | 12/03/2019 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <49.9 | 180 | <49.9 | 180 | **180** | <10.0 |
| SW10 | 0 - 5 | 12/04/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | <9.98 |
| SW11 | 0 - 5 | 12/04/2019 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <50.1 | 58.9 | <50.1 | 58.9 | 58.9 | <10.0 |
| SW12 | 0 - 5 | 12/05/2019 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <50.3 | <50.3 | <50.3 | <50.3 | <50.3 | 42.4 |
| SW13 | 0 - 5 | 12/05/2019 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 82.4 |
| SW14 | 0 - 6 | 12/10/2019 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <50.3 | <50.3 | <50.3 | <50.3 | <50.3 | 13 |
| SW15 | 0 - 6 | 12/10/2019 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <49.8 | 58.4 | <49.8 | 58.4 | 58.4 | <9.88 |
| SW16 | 0 - 6 | 12/12/2019 | <0.00200 | <0.00200 | <0.00200 | 0.00201 | 0.00201 | <50.0 | 2060 | 211 | 2060 | **2,270** | <9.98 |
| SW17 | 0 - 6 | 12/12/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.2 | 685 | 122 | 685 | **807** | <9.94 |
| SW18 | 0 - 6 | 12/12/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <50.1 | 741 | 81.5 | 741 | **823** | <9.92 |

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

**PLU BIG SINKS 11 FEDERAL BATTERY**
**REMEDIATION PERMIT NUMBER 2RP-3887**
**EDDY COUNTY, NEW MEXICO**
**XTO ENERGY, INC.**

| Sample Name | Sample Depth (feet bgs) | Sample Date | Benzene (mg/kg) | Toluene (mg/kg) | Ethyl-benzene (mg/kg) | Total Xylenes (mg/kg) | Total BTEX (mg/kg) | GRO (mg/kg) | DRO (mg/kg) | ORO (mg/kg) | Total GRO+DRO (mg/kg) | TPH (mg/kg) | Chloride (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NMOCD Table 1 Closure Criteria** | | | **10** | NE | NE | NE | **50** | NE | NE | NE | NE | **100** | **600** |
| FS01 | 3 | 03/29/2019 | <0.00200 | <0.00200 | <0.00200 | 0.0162 | 0.0162 | <15.0 | 289 | 57.5 | 289 | **347** | 16.8 |
| FS02 | 4 | 03/29/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <15.0 | 210 | 35.1 | 210 | **245** | 25.6 |
| FS03 | 4 | 03/29/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <14.9 | 425 | 67.4 | 425 | **492** | 33.0 |
| FS04 | 4 | 03/29/2019 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <15.0 | 375 | 58.9 | 375 | **434** | 70.9 |
| FS05 | 5 | 03/29/2019 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <15.0 | 26.8 | <15.0 | 26.8 | 26.8 | 7.51 |
| FS06 | 5 | 03/29/2019 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <15.0 | 37.5 | <15.0 | 37.5 | 37.5 | 6.85 |
| FS07 | 5 | 03/29/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <15.0 | 27.3 | <15.0 | 27.3 | 27.3 | 7.07 |
| FS08 | 5 | 03/29/2019 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <15.0 | 28.2 | <15.0 | 28.2 | 28.2 | 5.42 |
| FS09 | 3 | 03/29/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <15.0 | 155 | 19.2 | 155 | **174** | 14.0 |
| FS09A | 5 | 12/03/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.3 | 62.4 | <50.3 | 62.4 | 62.4 | <9.98 |
| FS10 | 3 | 03/29/2019 | <0.00202 | 0.00816 | 0.0711 | 0.519 | 0.598 | 410 | 1,620 | 165 | 2,030 | **2,200** | 7.95 |
| FS10A | 5 | 12/03/2019 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <50.1 | 139 | <50.1 | 139 | **139** | <10.1 |
| FS11 | 1 | 03/29/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <14.9 | 34.6 | <14.9 | 34.6 | 34.6 | 21.8 |
| FS12 | 1 | 03/29/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <15.0 | 60.2 | <15.0 | 60.2 | 60.2 | 30.5 |
| FS13 | 1 | 03/29/2019 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <15.0 | 69.3 | <15.0 | 69.3 | 69.3 | 27.3 |
| FS14 | 5 | 12/04/2019 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <50.0 | 99.4 | <50.0 | 99.4 | 99.4 | <10.0 |
| FS15 | 5 | 12/04/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.2 | 169 | <50.2 | 169 | **169** | <10.0 |
| FS15A | 7 | 12/10/2019 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <50.2 | 95.9 | <50.2 | 95.9 | 95.9 | 13.1 |
| FS16 | 5 | 12/04/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.1 | 320 | <50.1 | 320 | **320** | <10.0 |
| FS16A | 7 | 12/10/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.3 | <50.3 | <50.3 | <50.3 | <50.3 | 10.5 |
| FS17 | 5 | 12/05/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.2 | 100 | <50.2 | 100 | 100 | 11.6 |
| FS18 | 5 | 12/05/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <50.2 | 184 | <50.2 | 184 | **184** | <9.98 |
| FS18A | 7 | 12/10/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.1 | 84.7 | <50.1 | 84.7 | 84.7 | <9.98 |
| FS19 | 5 | 12/05/2019 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <50.2 | <50.2 | <50.2 | <50.2 | <50.2 | <9.92 |
| FS20 | 5 | 12/05/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.2 | <50.2 | <50.2 | <50.2 | <50.2 | <10.1 |
| FS21 | 6 | 12/10/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | <9.92 |
| FS22 | 6 | 12/10/2019 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <49.8 | <49.8 | <49.8 | <49.8 | <49.8 | <9.94 |
| FS23 | 6 | 12/10/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | <9.96 |
| FS24 | 6 | 12/10/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | <9.96 |
| FS25 | 6 | 12/10/2019 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <49.8 | <49.8 | <49.8 | <49.8 | <49.8 | <9.98 |
| FS26 | 6 | 12/10/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | <9.92 |

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

**PLU BIG SINKS 11 FEDERAL BATTERY**
**REMEDIATION PERMIT NUMBER 2RP-3887**
**EDDY COUNTY, NEW MEXICO**
**XTO ENERGY, INC.**

| Sample Name | Sample Depth (feet bgs) | Sample Date | Benzene (mg/kg) | Toluene (mg/kg) | Ethyl-benzene (mg/kg) | Total Xylenes (mg/kg) | Total BTEX (mg/kg) | GRO (mg/kg) | DRO (mg/kg) | ORO (mg/kg) | Total GRO+DRO (mg/kg) | TPH (mg/kg) | Chloride (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NMOCD Table 1 Closure Criteria** | | | **10** | NE | NE | NE | **50** | NE | NE | NE | NE | **100** | **600** |
| PH01 | 6 | 12/06/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <50.2 | <50.2 | <50.2 | <50.2 | <50.2 | 71.3 |
| PH01A | 8 | 12/06/2019 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 304 |
| PH01B | 3 | 12/06/2019 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 110 |
| PH02 | 2 | 12/06/2019 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 157 |
| PH02A | 4 | 12/06/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | 303 |
| PH02B | 8 | 12/06/2019 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <50.3 | <50.3 | <50.3 | <50.3 | <50.3 | 397 |
| PH03 | 2 | 12/12/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <49.8 | <49.8 | <49.8 | <49.8 | <49.8 | 79.8 |
| PH03A | 5 | 12/12/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 46.9 |
| PH03B | 8 | 12/12/2019 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 85.6 |
| PH04 | 2 | 12/12/2019 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | <10.1 |
| PH04A | 5 | 12/12/2019 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | 38.0 |
| PH04B | 8 | 12/12/2019 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <49.8 | <49.8 | <49.8 | <49.8 | <49.8 | 219 |
| PH05 | 2 | 12/12/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <50.2 | <50.2 | <50.2 | <50.2 | <50.2 | 13.5 |
| PH05A | 5 | 12/12/2019 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <50.2 | <50.2 | <50.2 | <50.2 | <50.2 | 134 |
| PH05B | 8 | 12/12/2019 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 120 |

**Notes:**

bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, and total xylenes
DRO - diesel range organics
GRO - gasoline range organics
mg/kg - milligrams per kilogram
ORO - motor oil range organics
NMAC - New Mexico Administrative Code
NMOCD - New Mexico Oil Conservation Division
NE - not established
TPH - total petroleum hydrocarbons

**Bold** - indicates result exceeds the applicable regulatory standard
< - indicates result is below laboratory reporting limits
Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018

## ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-3887)

NM OIL CONSERVATION
ARTESIA DISTRICT
SEP 14 2016
RECEIVED

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

# Release Notification and Corrective Action

nAB1625934302 200737

## OPERATOR

☒ Initial Report ☐ Final Report

| | |
|---|---|
| Name of Company: BOPCO, L.P. | Contact: Bradley Blevins |
| Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220 | Telephone No. 575-887-7329 |
| Facility Name: PLU Big Sinks 11 Federal Battery (PLU CVX JV BS 002H) | Facility Type: Exploration and Production |

| | | |
|---|---|---|
| Surface Owner: Federal | Mineral Owner: Federal | API No.30-015-37147 |

## LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/*South Line* | Feet from the | *East*/West Line | County |
|---|---|---|---|---|---|---|---|---|
| P | 11 | 24S | 30E | 255 | | 1300 | | Eddy |

**Latitude:** 32.225975 **Longitude:** 103.847008

## NATURE OF RELEASE

| | | |
|---|---|---|
| Type of Release: Crude Oil | Volume of Release: 79 barrels | Volume Recovered: 42 barrels |
| Source of Release: Victaulic check valve cap failed on lact unit | Date and Hour of Occurrence: 9-13-16 @ 11:00am | Date and Hour of Discovery: 9-13-16 @ 12:00pm |
| Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required | If YES, To Whom? Mike Bratcher, Heather Patterson, Jim Amos BLM | |
| By Whom? Bradley Blevins | Date and Hour: 9-13-16 2 1:43pm | |
| Was a Watercourse Reached? ☐ Yes ☒ No | If YES, Volume Impacting the Watercourse. | |

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

A Victaulic check valve cap failed on the lact unit releasing crude oil to the location, a vacuum truck was called to the location and was able to recover 42 barrels of oil from the ground surface. All released fluid remained on the well pad.

Describe Area Affected and Cleanup Action Taken.*
A vacuum truck was called to the location and was able to recover 42 barrels of oil; a remediation response crew was dispatched to the location to begin removing the saturated surface soils and conduct a sampling event.

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

| | |
|---|---|
| Signature: Bradley Blevins | OIL CONSERVATION DIVISION<br>Signed By<br>Approved by Environmental Specialist: |
| Printed Name: Bradley Blevins | |
| Title: Assistant Remediation Foreman | Approval Date: 9/15/16 Expiration Date: NA |
| E-mail Address: bblevins@basspet.com | Conditions of Approval: Attached ☐ |
| Date: 9-14-16 Phone: 432-214-3704 | **Remediation per O.C.D. Rules & Guidelines SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 10/15/16** |

* Attach Additional Sheets If Necessary

2RP-3887

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

| | |
|---|---|
| Incident ID | |
| District RP | 2RP-3887 |
| Facility ID | |
| Application ID | |

# Release Notification

## Responsible Party

| | |
|---|---|
| Responsible Party: XTO Energy, Inc | OGRID: 5380 |
| Contact Name: Kyle Littrell | Contact Telephone: (432)-221-7331 |
| Contact email: Kyle_Littrell@xtoenergy.com | Incident #: 2RP-3887 |
| Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220 | |

## Location of Release Source

Latitude N 32.225975 Longitude W -103.847008
*(NAD 83 in decimal degrees to 5 decimal places)*

| | |
|---|---|
| Site Name: PLU Big Sinks 11 Federal Battery | Site Type: Production Well Facility |
| Date Release Discovered: 9/13/2016 | API# *(if applicable):* 30-015-37147 |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| P | 11 | 24S | 30E | Eddy |

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name:* _____)

## Nature and Volume of Release

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

| | | |
|---|---|---|
| ☒ Crude Oil | Volume Released (bbls): 79 | Volume Recovered (bbls): 42 |
| ☐ Produced Water | Volume Released (bbls): | Volume Recovered (bbls): |
| | Is the concentration of dissolved chloride in the produced water >10,000 mg/l? | ☐ Yes ☐ No |
| ☐ Condensate | Volume Released (bbls) | Volume Recovered (bbls) |
| ☐ Natural Gas | Volume Released (Mcf) | Volume Recovered (Mcf) |
| ☐ Other (describe) | Volume/Weight Released (provide units) | Volume/Weight Recovered (provide units) |

Cause of Release
A Victaulic check valve cap failed on the LACT unit, releasing crude oil to the location. Free-standing fluids were recovered. All released fluid remained on the well pad.

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | |
| District RP | 2RP-3887 |
| Facility ID | |
| Application ID | |

| | |
|---|---|
| Was this a major release as defined by 19.15.29.7(A) NMAC?<br><br>☒ Yes ☐ No | If YES, for what reason(s) does the responsible party consider this a major release?<br>Release volume was greater than 25 bbls. |

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
By Bradley Blevins to Mike Bratcher/Heather Patterson (NMOCD) and Jim Amos (BLM) on 9/13/2016 at 1:43 pm.

## 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:
N/A

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 3-10-2020

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

**OCD Only**

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | |
| District RP | 2RP-3887 |
| Facility ID | |
| Application ID | |

# Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | |
| District RP | 2RP-3887 |
| Facility ID | |
| Application ID | |

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 3-10-2020

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

**OCD Only**

Received by: Date: _____

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | |
| District RP | 2RP-3887 |
| Facility ID | |
| Application ID | |

# Remediation Plan

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

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

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

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

☒ Extents of contamination must be fully delineated.

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 3-10-2020

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

**OCD Only**

Received by: Date:

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

Signature: Bradford Billings Date: 05/12/2020

# ATTACHMENT 2: LITHOLOGIC / SOIL SAMPLE LOGS

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

| Identifier: | Date: |
|---|---|
| PH01 | 12-6-2019 |
| Project Name: PLU BS 11 Federal Battery | RP Number: |
| Logged By: ~~B.B.~~ LAD | Method: Bucket |
| Hole Diameter: | Total Depth: |
| Field Screening: CHLORIDES, PID. | |
| Lat/Long: | |

**LITHOLOGIC / SOIL SAMPLING LOG**

Comments:

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Depth (ft. bgs.) | Sample Depth | Soil/Rock Type | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | 0 | | | |
| | | | | | 1 | | | |
| | | | | | 2 | | | Slighty dark brown |
| 1527 None | 1.0 (168) | 0.1 | None | 3 | 3 | 3' | | ~~Light brown~~, no odor, no moisture, no clumping, poorly graded, fine grained sand, no organics |
| | | | | | 4 | | | |
| | | | | | 5 | | | |
| 1245 None | 0.8 (168) | 0.1 | None | 1 | 6 | 6' | | Light brown, no odor, no moisture, no clumping, no plasticity, poorly graded, fine-grained sand, no organics |
| | | | | | 7 | | | |
| | | | | | 8 | | | |
| 1325 None | 1.5 (207.2) | 0.1 | None | 2 | 9 | 8.5' | | SAA |
| | | | | | 10 | | | |
| | | | | | 11 | | | |
| | | | | | 12 | | | |

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

| Identifier: | Date: |
|---|---|
| PH02 | 12/6/2019 |
| Project Name: PLU BS Federal Battery #1 | RP Number: |
| Logged By: ~~B.B.~~ LM | Method: |
| Lat/Long: | Field Screening: CHLORIDES, PID. |
| Hole Diameter: | Total Depth: |

**LITHOLOGIC / SOIL SAMPLING LOG**

Comments:

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Depth (ft. bgs.) | Sample Depth | Soil/Rock Type | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| Nue | 1.0 (212.8) | 1.2 | Nue | 1 | 2 | 2' | | Slightly dark brown, no moisture, no clumping, poorly graded, fine-grained sand, ~~not~~ no organics |
| Nue | 1.8 (242.8) | 0.0 | Nue | 2 | 4 | 4' | | Light brown, no moisture, no clumping, poorly graded, fine-grained sand, no clumping |
| Nue | 2.0 (285.6) | 2.4 | Nue | 3 | 8 | 8' | | Dark brown/reddish crystals/veins, otherwise SAA |

0 1 2 3 4 5 6 7 8 9 10 11 12

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

| Identifier: | Date: |
|---|---|
| PH03 | 12.13.19 |
| **Project Name:** | **RP Number:** |
| PLU BS II Fed Battery | 2RP-3887 |

## LITHOLOGIC / SOIL SAMPLING LOG

| Logged By: | Method: |
|---|---|
| JL | Trackhoe |
| **Lat/Long:** | **Field Screening:** PID, Chloride |
| **Hole Diameter:** — | **Total Depth:** 8' |

Comments: TD @ 8'

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Depth (ft. bgs.) | Sample Depth | Soil/Rock Type | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | 0 | | | |
| | | | | | 1 | | SP-SM | 0 - 1<br>Sand, brown, no odor, no stain, m-f, poorly graded / trace silt |
| D | <179 | 0.0 | N | PH03 | 2 | 2' | Caliche | 2 - 8 |
| | | | | | 3 | | | Caliche', tan, offwhite, no odor, no stain |
| | | | | | 4 | | | |
| D | <179 | 0.0 | N | PH03A | 5 | 5' | | |
| | | | | | 6 | | | |
| | | | | | 7 | | | |
| D | <179 | 0.0 | N | PH03B | 8 | 8' | | |
| | | | | | 9 | | | TD @ 8' |
| | | | | | 10 | | | |
| | | | | | 11 | | | |
| | | | | | 12 | | | |

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

| Identifier: | Date: |
|---|---|
| PH04 | 12.13.19 |
| **Project Name:** | **RP Number:** |
| PLU BS 11 Fed Battery | 2RP-3887 |

**LITHOLOGIC / SOIL SAMPLING LOG**

| Logged By: | Method: |
|---|---|
| SL | Trackhoe |

| Lat/Long: | Field Screening: (PID) (Chloride) | Hole Diameter: | Total Depth: |
|---|---|---|---|
| | | | 8' |

Comments: TD @ 8'

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Depth (ft. bgs.) | Sample Depth | Soil/Rock Type | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | 0 | | | |
| | | | | | 1 | | SP-SM | 0 - 1 Sand, brown, no odor, no stain, m-f, poorly graded, trace silt |
| D | <179 | 0.0 | N | PH04 | 2 | 2' | | 2 - 8 |
| | | | | | 3 | | CCHE | Caliche, tan, off white, no odor, no stain |
| | | | | | 4 | | | |
| D | <179 | 0.0 | N | PH04A | 5 | 5' | | |
| | | | | | 6 | | | |
| | | | | | 7 | | | |
| D | <179 | 0.0 | N | PH04B | 8 | 8' | | |
| | | | | | 9 | | | TD @ 8' |
| | | | | | 10 | | | |
| | | | | | 11 | | | |
| | | | | | 12 | | | |

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

| Identifier: | Date: |
|---|---|
| PH05 | 12.13.19 |
| **Project Name:** | **RP Number:** |
| PLU BS 11 Fed Battery | 2RP-3887 |

**LITHOLOGIC / SOIL SAMPLING LOG**

| Logged By: | Method: |
|---|---|
| SL | Trackhoe |
| **Lat/Long:** | **Field Screening:** (PID) Chloride |
| **Hole Diameter:** | **Total Depth:** 8' |

Comments: TD @ 8'

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Depth (ft. bgs.) | Sample Depth | Soil/Rock Type | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | 0 | | | 0-1 ft |
| | | | | | 1 | | SP-SM | Sand, brown, no odor, no stain, m-f, poorly graded trace silt |
| D | <179 | 0.0 | N | PH05 | 2 | 2' | | 2-8 ft |
| | | | | | 3 | | | Caliche, off white, tan, no odor, no stain |
| | | | | | 4 | | CCAVE | |
| D | <179 | 0.0 | N | PH05A | 5 | 5' | | |
| | | | | | 6 | | | |
| | | | | | 7 | | | |
| D | <179 | 0.0 | N | PH05B | 8 | 8' | | |
| | | | | | 9 | | | TD @ 8' |
| | | | | | 10 | | | |
| | | | | | 11 | | | |
| | | | | | 12 | | | |

PHOTOGRAPHIC LOG

**Photograph 1:** Northwest facing view of excavation.

**Photograph 2:** North facing view of excavation.

**Photograph 3:** North facing view of excavation.

**Photograph 4:** South facing view of excavation.

# ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS

# Analytical Report 576503

## for

## LT Environmental, Inc.

**Project Manager: Adrian Baker**

**PLU Big Sinks 11 Federal**

**23-FEB-18**

Collected By: Client



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

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

23-FEB-18

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

Reference: XENCO Report No(s): **576503**
**PLU Big Sinks 11 Federal**
Project Address: NM

**Adrian Baker**:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 576503. 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. 576503 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**
Odessa Laboratory Director

# Sample Cross Reference 576503

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| SS01 | S | 02-13-18 16:10 | 6 In | 576503-001 |
| SS02 | S | 02-13-18 16:20 | 6 In | 576503-002 |
| SS03 | S | 02-13-18 16:30 | 6 In | 576503-003 |
| SS04 | S | 02-13-18 16:40 | 6 In | 576503-004 |
| SS05 | S | 02-13-18 16:50 | 6 In | 576503-005 |
| SS06 | S | 02-13-18 17:00 | 6 In | 576503-006 |
| SS07 | S | 02-13-18 17:10 | 6 In | 576503-007 |
| SS08 | S | 02-13-18 17:20 | 6 In | 576503-008 |

**Sample receipt non conformances and comments:**

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

None

**Analytical non conformances and comments:**

Batch: LBA-3041453 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3041865 Inorganic Anions by EPA 300
Lab Sample ID 576503-004 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: 576503-003, -004, -005, -006, -007, -008.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

# Certificate of Analysis Summary 576503

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU Big Sinks 11 Federal

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

**Date Received in Lab:** Wed Feb-14-18 06:00 pm
**Report Date:** 23-FEB-18
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 576503-001 | | 576503-002 | | 576503-003 | | 576503-004 | | 576503-005 | | 576503-006 | |
| | ***Field Id:*** | SS01 | | SS02 | | SS03 | | SS04 | | SS05 | | SS06 | |
| | ***Depth:*** | 6- In | | 6- In | | 6- In | | 6- In | | 6- In | | 6- In | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Feb-13-18 16:10 | | Feb-13-18 16:20 | | Feb-13-18 16:30 | | Feb-13-18 16:40 | | Feb-13-18 16:50 | | Feb-13-18 17:00 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Feb-16-18 15:30 | | Feb-16-18 15:30 | | Feb-16-18 15:30 | | Feb-16-18 15:30 | | Feb-16-18 15:30 | | Feb-16-18 15:30 | |
| | ***Analyzed:*** | Feb-16-18 23:02 | | Feb-16-18 23:21 | | Feb-16-18 23:40 | | Feb-16-18 23:59 | | Feb-17-18 00:18 | | Feb-17-18 00:36 | |
| | ***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 | <0.00202 | 0.00202 | <0.00199 | 0.00199 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | <0.00200 | 0.00200 |
| Toluene | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | 0.00243 | 0.00199 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | 0.00228 | 0.00200 |
| Ethylbenzene | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00199 | 0.00199 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | <0.00200 | 0.00200 |
| m,p-Xylenes | | <0.00401 | 0.00401 | <0.00404 | 0.00404 | <0.00398 | 0.00398 | <0.00399 | 0.00399 | <0.00396 | 0.00396 | <0.00401 | 0.00401 |
| o-Xylene | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | 0.00287 | 0.00199 | 0.00225 | 0.00200 | 0.00239 | 0.00198 | 0.00282 | 0.00200 |
| Total Xylenes | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | 0.00287 | 0.00199 | 0.00225 | 0.00200 | 0.00239 | 0.00198 | 0.00282 | 0.00200 |
| Total BTEX | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | 0.00530 | 0.00199 | 0.00225 | 0.00200 | 0.00239 | 0.00198 | 0.00510 | 0.00200 |
| **Inorganic Anions by EPA 300** | ***Extracted:*** | Feb-21-18 17:00 | | Feb-21-18 17:00 | | Feb-22-18 12:55 | | Feb-22-18 12:55 | | Feb-22-18 12:55 | | Feb-22-18 12:55 | |
| | ***Analyzed:*** | Feb-22-18 02:54 | | Feb-22-18 02:59 | | Feb-22-18 12:55 | | Feb-22-18 14:19 | | Feb-22-18 13:13 | | Feb-22-18 13:19 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 50.6 | 4.99 | 29.9 | 4.92 | 66.2 | 4.87 | 42.3 | 5.04 | 49.1 | 4.89 | 36.3 | 5.04 |
| **TPH by SW8015 Mod** | ***Extracted:*** | Feb-18-18 14:00 | | Feb-18-18 14:00 | | Feb-18-18 14:00 | | Feb-18-18 14:00 | | Feb-18-18 14:00 | | Feb-18-18 14:00 | |
| | ***Analyzed:*** | Feb-19-18 06:58 | | Feb-19-18 07:18 | | Feb-19-18 07:38 | | Feb-19-18 07:58 | | Feb-19-18 08:18 | | Feb-19-18 08:38 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | <74.9 | 74.9 | <74.9 | 74.9 | <74.7 | 74.7 | 107 | 74.8 | <74.7 | 74.7 | <74.9 | 74.9 |
| Diesel Range Organics (DRO) | | 4180 | 74.9 | 4320 | 74.9 | 4260 | 74.7 | 3680 | 74.8 | 3990 | 74.7 | 3400 | 74.9 |
| Oil Range Hydrocarbons (ORO) | | 697 | 74.9 | 699 | 74.9 | 705 | 74.7 | 593 | 74.8 | 663 | 74.7 | 562 | 74.9 |
| Total TPH | | 4880 | 74.9 | 5020 | 74.9 | 4970 | 74.7 | 4380 | 74.8 | 4650 | 74.7 | 3960 | 74.9 |

# Certificate of Analysis Summary 576503

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU Big Sinks 11 Federal

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

**Date Received in Lab:** Wed Feb-14-18 06:00 pm
**Report Date:** 23-FEB-18
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 576503-007 | | 576503-008 | | | | | |
| | ***Field Id:*** | SS07 | | SS08 | | | | | |
| | ***Depth:*** | 6- In | | 6- In | | | | | |
| | ***Matrix:*** | SOIL | | SOIL | | | | | |
| | ***Sampled:*** | Feb-13-18 17:10 | | Feb-13-18 17:20 | | | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Feb-16-18 15:30 | | Feb-16-18 15:30 | | | | | |
| | ***Analyzed:*** | Feb-17-18 00:59 | | Feb-17-18 01:17 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Benzene | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | | | | |
| Toluene | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | | | | |
| Ethylbenzene | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | | | | |
| m,p-Xylenes | | <0.00402 | 0.00402 | <0.00404 | 0.00404 | | | | |
| o-Xylene | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | | | | |
| Total Xylenes | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | | | | |
| Total BTEX | | <0.00201 | 0.00201 | <0.00202 | 0.00202 | | | | |
| **Inorganic Anions by EPA 300** | ***Extracted:*** | Feb-22-18 12:55 | | Feb-22-18 12:55 | | | | | |
| | ***Analyzed:*** | Feb-22-18 13:31 | | Feb-22-18 13:37 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Chloride | | 148 | 4.93 | 118 | 4.93 | | | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | Feb-18-18 14:00 | | Feb-18-18 14:00 | | | | | |
| | ***Analyzed:*** | Feb-19-18 08:57 | | Feb-19-18 09:17 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Gasoline Range Hydrocarbons (GRO) | | <74.9 | 74.9 | <74.8 | 74.8 | | | | |
| Diesel Range Organics (DRO) | | 3520 | 74.9 | 3600 | 74.8 | | | | |
| Oil Range Hydrocarbons (ORO) | | 544 | 74.9 | 599 | 74.8 | | | | |
| Total TPH | | 4060 | 74.9 | 4200 | 74.8 | | | | |

# Certificate of Analytical Results 576503

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS01** | Matrix: | Soil | Date Received: | 02.14.18 18.00 |
| Lab Sample Id: | 576503-001 | Date Collected: | 02.13.18 16.10 | Sample Depth: | 6 In |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | OJS | | | % Moisture: | |
| Analyst: | OJS | Date Prep: | 02.21.18 17.00 | Basis: | Wet Weight |
| Seq Number: | 3041790 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **50.6** | 4.99 | mg/kg | 02.22.18 02.54 | | 1 |

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

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <74.9 | 74.9 | mg/kg | 02.19.18 06.58 | U | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **4180** | 74.9 | mg/kg | 02.19.18 06.58 | | 5 |
| **Oil Range Hydrocarbons (ORO)** | PHCG2835 | **697** | 74.9 | mg/kg | 02.19.18 06.58 | | 5 |
| **Total TPH** | PHC635 | **4880** | 74.9 | mg/kg | 02.19.18 06.58 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 108 | % | 70-135 | 02.19.18 06.58 | |
| o-Terphenyl | 84-15-1 | 96 | % | 70-135 | 02.19.18 06.58 | |

# Certificate of Analytical Results 576503

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS01** | Matrix: | Soil | Date Received: | 02.14.18 18.00 |
| Lab Sample Id: | 576503-001 | Date Collected: | 02.13.18 16.10 | Sample Depth: | 6 In |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | ALJ | | | % Moisture: | |
| Analyst: | ALJ | Date Prep: | 02.16.18 15.30 | Basis: | Wet Weight |
| Seq Number: | 3041453 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 02.16.18 23.02 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 02.16.18 23.02 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 02.16.18 23.02 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 02.16.18 23.02 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 02.16.18 23.02 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 02.16.18 23.02 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 02.16.18 23.02 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 88 | % | 80-120 | 02.16.18 23.02 | |
| 4-Bromofluorobenzene | 460-00-4 | 102 | % | 80-120 | 02.16.18 23.02 | |

# Certificate of Analytical Results 576503

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS02** | Matrix: | Soil | Date Received: | 02.14.18 18.00 |
| Lab Sample Id: | 576503-002 | Date Collected: | 02.13.18 16.20 | Sample Depth: | 6 In |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | OJS | | | % Moisture: | |
| Analyst: | OJS | Date Prep: | 02.21.18 17.00 | Basis: | Wet Weight |
| Seq Number: | 3041790 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **29.9** | 4.92 | mg/kg | 02.22.18 02.59 | | 1 |

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

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <74.9 | 74.9 | mg/kg | 02.19.18 07.18 | U | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **4320** | 74.9 | mg/kg | 02.19.18 07.18 | | 5 |
| **Oil Range Hydrocarbons (ORO)** | PHCG2835 | **699** | 74.9 | mg/kg | 02.19.18 07.18 | | 5 |
| **Total TPH** | PHC635 | **5020** | 74.9 | mg/kg | 02.19.18 07.18 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 96 | % | 70-135 | 02.19.18 07.18 | |
| o-Terphenyl | 84-15-1 | 90 | % | 70-135 | 02.19.18 07.18 | |

# Certificate of Analytical Results 576503

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS02** | Matrix: | Soil | Date Received: | 02.14.18 18.00 |
| Lab Sample Id: | 576503-002 | Date Collected: | 02.13.18 16.20 | Sample Depth: | 6 In |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | ALJ | | | % Moisture: | |
| Analyst: | ALJ | Date Prep: | 02.16.18 15.30 | Basis: | Wet Weight |
| Seq Number: | 3041453 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 02.16.18 23.21 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 02.16.18 23.21 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 02.16.18 23.21 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00404 | 0.00404 | mg/kg | 02.16.18 23.21 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 02.16.18 23.21 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 02.16.18 23.21 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 02.16.18 23.21 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 111 | % | 80-120 | 02.16.18 23.21 | |
| 1,4-Difluorobenzene | 540-36-3 | 81 | % | 80-120 | 02.16.18 23.21 | |

# Certificate of Analytical Results 576503

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS03** | Matrix: | Soil | Date Received: | 02.14.18 18.00 |
| Lab Sample Id: | 576503-003 | Date Collected: | 02.13.18 16.30 | Sample Depth: | 6 In |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | LRI | | | % Moisture: | |
| Analyst: | OJS | Date Prep: | 02.22.18 12.55 | Basis: | Wet Weight |
| Seq Number: | 3041865 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **66.2** | 4.87 | mg/kg | 02.22.18 12.55 | | 1 |

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

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <74.7 | 74.7 | mg/kg | 02.19.18 07.38 | U | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **4260** | 74.7 | mg/kg | 02.19.18 07.38 | | 5 |
| **Oil Range Hydrocarbons (ORO)** | PHCG2835 | **705** | 74.7 | mg/kg | 02.19.18 07.38 | | 5 |
| **Total TPH** | PHC635 | **4970** | 74.7 | mg/kg | 02.19.18 07.38 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 102 | % | 70-135 | 02.19.18 07.38 | |
| o-Terphenyl | 84-15-1 | 97 | % | 70-135 | 02.19.18 07.38 | |

# Certificate of Analytical Results 576503

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS03** | Matrix: | Soil | Date Received: | 02.14.18 18.00 |
| Lab Sample Id: | 576503-003 | Date Collected: | 02.13.18 16.30 | Sample Depth: | 6 In |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | ALJ | | | % Moisture: | |
| Analyst: | ALJ | Date Prep: | 02.16.18 15.30 | Basis: | Wet Weight |
| Seq Number: | 3041453 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 02.16.18 23.40 | U | 1 |
| **Toluene** | 108-88-3 | **0.00243** | 0.00199 | mg/kg | 02.16.18 23.40 | | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 02.16.18 23.40 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 02.16.18 23.40 | U | 1 |
| **o-Xylene** | 95-47-6 | **0.00287** | 0.00199 | mg/kg | 02.16.18 23.40 | | 1 |
| **Total Xylenes** | 1330-20-7 | **0.00287** | 0.00199 | mg/kg | 02.16.18 23.40 | | 1 |
| **Total BTEX** | | **0.00530** | 0.00199 | mg/kg | 02.16.18 23.40 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 115 | % | 80-120 | 02.16.18 23.40 | |
| 1,4-Difluorobenzene | 540-36-3 | 93 | % | 80-120 | 02.16.18 23.40 | |

# Certificate of Analytical Results 576503

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS04** | Matrix: | Soil | Date Received: | 02.14.18 18.00 |
| Lab Sample Id: | 576503-004 | Date Collected: | 02.13.18 16.40 | Sample Depth: | 6 In |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | LRI | | | % Moisture: | |
| Analyst: | OJS | Date Prep: | 02.22.18 12.55 | Basis: | Wet Weight |
| Seq Number: | 3041865 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **42.3** | 5.04 | mg/kg | 02.22.18 14.19 | | 1 |

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

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **107** | 74.8 | mg/kg | 02.19.18 07.58 | | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **3680** | 74.8 | mg/kg | 02.19.18 07.58 | | 5 |
| **Oil Range Hydrocarbons (ORO)** | PHCG2835 | **593** | 74.8 | mg/kg | 02.19.18 07.58 | | 5 |
| **Total TPH** | PHC635 | **4380** | 74.8 | mg/kg | 02.19.18 07.58 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 92 | % | 70-135 | 02.19.18 07.58 | |
| o-Terphenyl | 84-15-1 | 95 | % | 70-135 | 02.19.18 07.58 | |

# Certificate of Analytical Results 576503

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS04** | Matrix: | Soil | Date Received: | 02.14.18 18.00 |
| Lab Sample Id: | 576503-004 | Date Collected: | 02.13.18 16.40 | Sample Depth: | 6 In |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | ALJ | | | % Moisture: | |
| Analyst: | ALJ | Date Prep: | 02.16.18 15.30 | Basis: | Wet Weight |
| Seq Number: | 3041453 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 02.16.18 23.59 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 02.16.18 23.59 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 02.16.18 23.59 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 02.16.18 23.59 | U | 1 |
| **o-Xylene** | 95-47-6 | **0.00225** | 0.00200 | mg/kg | 02.16.18 23.59 | | 1 |
| **Total Xylenes** | 1330-20-7 | **0.00225** | 0.00200 | mg/kg | 02.16.18 23.59 | | 1 |
| **Total BTEX** | | **0.00225** | 0.00200 | mg/kg | 02.16.18 23.59 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 88 | % | 80-120 | 02.16.18 23.59 | |
| 4-Bromofluorobenzene | 460-00-4 | 100 | % | 80-120 | 02.16.18 23.59 | |

# Certificate of Analytical Results 576503

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS05** | Matrix: | Soil | Date Received: | 02.14.18 18.00 |
| Lab Sample Id: | 576503-005 | Date Collected: | 02.13.18 16.50 | Sample Depth: | 6 In |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | LRI | | | % Moisture: | |
| Analyst: | OJS | Date Prep: | 02.22.18 12.55 | Basis: | Wet Weight |
| Seq Number: | 3041865 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **49.1** | 4.89 | mg/kg | 02.22.18 13.13 | | 1 |

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

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <74.7 | 74.7 | mg/kg | 02.19.18 08.18 | U | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **3990** | 74.7 | mg/kg | 02.19.18 08.18 | | 5 |
| **Oil Range Hydrocarbons (ORO)** | PHCG2835 | **663** | 74.7 | mg/kg | 02.19.18 08.18 | | 5 |
| **Total TPH** | PHC635 | **4650** | 74.7 | mg/kg | 02.19.18 08.18 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 101 | % | 70-135 | 02.19.18 08.18 | |
| o-Terphenyl | 84-15-1 | 100 | % | 70-135 | 02.19.18 08.18 | |

# Certificate of Analytical Results 576503

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS05** | Matrix: | Soil | Date Received: | 02.14.18 18.00 |
| Lab Sample Id: | 576503-005 | Date Collected: | 02.13.18 16.50 | Sample Depth: | 6 In |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | ALJ | | | % Moisture: | |
| Analyst: | ALJ | Date Prep: | 02.16.18 15.30 | Basis: | Wet Weight |
| Seq Number: | 3041453 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00198 | 0.00198 | mg/kg | 02.17.18 00.18 | U | 1 |
| Toluene | 108-88-3 | <0.00198 | 0.00198 | mg/kg | 02.17.18 00.18 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00198 | 0.00198 | mg/kg | 02.17.18 00.18 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00396 | 0.00396 | mg/kg | 02.17.18 00.18 | U | 1 |
| **o-Xylene** | 95-47-6 | **0.00239** | 0.00198 | mg/kg | 02.17.18 00.18 | | 1 |
| **Total Xylenes** | 1330-20-7 | **0.00239** | 0.00198 | mg/kg | 02.17.18 00.18 | | 1 |
| **Total BTEX** | | **0.00239** | 0.00198 | mg/kg | 02.17.18 00.18 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 88 | % | 80-120 | 02.17.18 00.18 | |
| 4-Bromofluorobenzene | 460-00-4 | 101 | % | 80-120 | 02.17.18 00.18 | |

# Certificate of Analytical Results 576503

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS06** | Matrix: | Soil | Date Received: | 02.14.18 18.00 |
| Lab Sample Id: | 576503-006 | Date Collected: | 02.13.18 17.00 | Sample Depth: | 6 In |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | LRI | | | % Moisture: | |
| Analyst: | OJS | Date Prep: | 02.22.18 12.55 | Basis: | Wet Weight |
| Seq Number: | 3041865 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **36.3** | 5.04 | mg/kg | 02.22.18 13.19 | | 1 |

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

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <74.9 | 74.9 | mg/kg | 02.19.18 08.38 | U | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **3400** | 74.9 | mg/kg | 02.19.18 08.38 | | 5 |
| **Oil Range Hydrocarbons (ORO)** | PHCG2835 | **562** | 74.9 | mg/kg | 02.19.18 08.38 | | 5 |
| **Total TPH** | PHC635 | **3960** | 74.9 | mg/kg | 02.19.18 08.38 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 90 | % | 70-135 | 02.19.18 08.38 | |
| o-Terphenyl | 84-15-1 | 89 | % | 70-135 | 02.19.18 08.38 | |

# Certificate of Analytical Results 576503

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS06** | Matrix: | Soil | Date Received: | 02.14.18 18.00 |
| Lab Sample Id: | 576503-006 | Date Collected: | 02.13.18 17.00 | Sample Depth: | 6 In |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | ALJ | | | % Moisture: | |
| Analyst: | ALJ | Date Prep: | 02.16.18 15.30 | Basis: | Wet Weight |
| Seq Number: | 3041453 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 02.17.18 00.36 | U | 1 |
| **Toluene** | 108-88-3 | **0.00228** | 0.00200 | mg/kg | 02.17.18 00.36 | | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 02.17.18 00.36 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 02.17.18 00.36 | U | 1 |
| **o-Xylene** | 95-47-6 | **0.00282** | 0.00200 | mg/kg | 02.17.18 00.36 | | 1 |
| **Total Xylenes** | 1330-20-7 | **0.00282** | 0.00200 | mg/kg | 02.17.18 00.36 | | 1 |
| **Total BTEX** | | **0.00510** | 0.00200 | mg/kg | 02.17.18 00.36 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 86 | % | 80-120 | 02.17.18 00.36 | |
| 4-Bromofluorobenzene | 460-00-4 | 107 | % | 80-120 | 02.17.18 00.36 | |

# Certificate of Analytical Results 576503

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS07** | Matrix: | Soil | Date Received: | 02.14.18 18.00 |
| Lab Sample Id: | 576503-007 | Date Collected: | 02.13.18 17.10 | Sample Depth: | 6 In |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | LRI | | | % Moisture: | |
| Analyst: | OJS | Date Prep: | 02.22.18 12.55 | Basis: | Wet Weight |
| Seq Number: | 3041865 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **148** | 4.93 | mg/kg | 02.22.18 13.31 | | 1 |

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

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <74.9 | 74.9 | mg/kg | 02.19.18 08.57 | U | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **3520** | 74.9 | mg/kg | 02.19.18 08.57 | | 5 |
| **Oil Range Hydrocarbons (ORO)** | PHCG2835 | **544** | 74.9 | mg/kg | 02.19.18 08.57 | | 5 |
| **Total TPH** | PHC635 | **4060** | 74.9 | mg/kg | 02.19.18 08.57 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 91 | % | 70-135 | 02.19.18 08.57 | |
| o-Terphenyl | 84-15-1 | 92 | % | 70-135 | 02.19.18 08.57 | |

# Certificate of Analytical Results 576503

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS07** | Matrix: | Soil | Date Received: | 02.14.18 18.00 |
| Lab Sample Id: | 576503-007 | Date Collected: | 02.13.18 17.10 | Sample Depth: | 6 In |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | ALJ | | | % Moisture: | |
| Analyst: | ALJ | Date Prep: | 02.16.18 15.30 | Basis: | Wet Weight |
| Seq Number: | 3041453 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 02.17.18 00.59 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 02.17.18 00.59 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 02.17.18 00.59 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 02.17.18 00.59 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 02.17.18 00.59 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 02.17.18 00.59 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 02.17.18 00.59 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 101 | % | 80-120 | 02.17.18 00.59 | |
| 1,4-Difluorobenzene | 540-36-3 | 96 | % | 80-120 | 02.17.18 00.59 | |

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS08** | Matrix: | Soil | Date Received: | 02.14.18 18.00 |
| Lab Sample Id: | 576503-008 | Date Collected: | 02.13.18 17.20 | Sample Depth: | 6 In |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | LRI | | | % Moisture: | |
| Analyst: | OJS | Date Prep: | 02.22.18 12.55 | Basis: | Wet Weight |
| Seq Number: | 3041865 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **118** | 4.93 | mg/kg | 02.22.18 13.37 | | 1 |

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

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <74.8 | 74.8 | mg/kg | 02.19.18 09.17 | U | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **3600** | 74.8 | mg/kg | 02.19.18 09.17 | | 5 |
| **Oil Range Hydrocarbons (ORO)** | PHCG2835 | **599** | 74.8 | mg/kg | 02.19.18 09.17 | | 5 |
| **Total TPH** | PHC635 | **4200** | 74.8 | mg/kg | 02.19.18 09.17 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 95 | % | 70-135 | 02.19.18 09.17 | |
| o-Terphenyl | 84-15-1 | 95 | % | 70-135 | 02.19.18 09.17 | |

# Certificate of Analytical Results 576503

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS08** | Matrix: | Soil | Date Received: | 02.14.18 18.00 |
| Lab Sample Id: | 576503-008 | Date Collected: | 02.13.18 17.20 | Sample Depth: | 6 In |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | ALJ | | | % Moisture: | |
| Analyst: | ALJ | Date Prep: | 02.16.18 15.30 | Basis: | Wet Weight |
| Seq Number: | 3041453 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 02.17.18 01.17 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 02.17.18 01.17 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 02.17.18 01.17 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00404 | 0.00404 | mg/kg | 02.17.18 01.17 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 02.17.18 01.17 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 02.17.18 01.17 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 02.17.18 01.17 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 101 | % | 80-120 | 02.17.18 01.17 | |
| 1,4-Difluorobenzene | 540-36-3 | 86 | % | 80-120 | 02.17.18 01.17 | |

# Flagging Criteria

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

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

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

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

**F** RPD exceeded lab control limits.

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

**U** Analyte was not detected.

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

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

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

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

** Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

+ NELAC certification not offered for this compound.

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

# QC Summary 576503

## LT Environmental, Inc.

PLU Big Sinks 11 Federal

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3041790 Matrix: Solid Date Prep: 02.21.18
MB Sample Id: 7639564-1-BLK LCS Sample Id: 7639564-1-BKS LCSD Sample Id: 7639564-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | 250 | 274 | 110 | 273 | 109 | 90-110 | 0 | 20 | mg/kg | 02.22.18 00:25 | |

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3041865 Matrix: Solid Date Prep: 02.22.18
MB Sample Id: 7639620-1-BLK LCS Sample Id: 7639620-1-BKS LCSD Sample Id: 7639620-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | 250 | 268 | 107 | 258 | 103 | 90-110 | 4 | 20 | mg/kg | 02.22.18 12:44 | |

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3041790 Matrix: Soil Date Prep: 02.21.18
Parent Sample Id: 576500-005 MS Sample Id: 576500-005 S MSD Sample Id: 576500-005 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 126 | 245 | 369 | 99 | 390 | 108 | 90-110 | 6 | 20 | mg/kg | 02.22.18 00:41 | |

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3041790 Matrix: Soil Date Prep: 02.21.18
Parent Sample Id: 576501-003 MS Sample Id: 576501-003 S MSD Sample Id: 576501-003 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | 250 | 277 | 111 | 274 | 110 | 90-110 | 1 | 20 | mg/kg | 02.22.18 01:55 | X |

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3041865 Matrix: Soil Date Prep: 02.22.18
Parent Sample Id: 576503-003 MS Sample Id: 576503-003 S MSD Sample Id: 576503-003 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 66.2 | 244 | 353 | 118 | 321 | 104 | 90-110 | 9 | 20 | mg/kg | 02.22.18 13:01 | X |

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

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

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

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

# QC Summary 576503

## LT Environmental, Inc.

PLU Big Sinks 11 Federal

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P

Seq Number: 3041865 Matrix: Soil Date Prep: 02.22.18

Parent Sample Id: 576503-004 MS Sample Id: 576503-004 S MSD Sample Id: 576503-004 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 42.3 | 252 | 345 | 120 | 330 | 114 | 90-110 | 4 | 20 | mg/kg | 02.22.18 14:25 | X |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P

Seq Number: 3041598 Matrix: Solid Date Prep: 02.18.18

MB Sample Id: 7639461-1-BLK LCS Sample Id: 7639461-1-BKS LCSD Sample Id: 7639461-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <15.0 | 1000 | 1020 | 102 | 1010 | 101 | 70-135 | 1 | 35 | mg/kg | 02.19.18 00:05 | |
| Diesel Range Organics (DRO) | <15.0 | 1000 | 893 | 89 | 866 | 87 | 70-135 | 3 | 35 | mg/kg | 02.19.18 00:05 | |

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

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P

Seq Number: 3041598 Matrix: Soil Date Prep: 02.18.18

Parent Sample Id: 576507-002 MS Sample Id: 576507-002 S MSD Sample Id: 576507-002 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <15.0 | 997 | 1070 | 107 | 1130 | 113 | 70-135 | 5 | 35 | mg/kg | 02.19.18 01:27 | |
| Diesel Range Organics (DRO) | <15.0 | 997 | 975 | 98 | 1080 | 108 | 70-135 | 10 | 35 | mg/kg | 02.19.18 01:27 | |

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

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

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

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

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

# QC Summary 576503

## LT Environmental, Inc.

PLU Big Sinks 11 Federal

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

Seq Number: 3041453 Matrix: Solid Date Prep: 02.16.18

MB Sample Id: 7639384-1-BLK LCS Sample Id: 7639384-1-BKS LCSD Sample Id: 7639384-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | 0.101 | 0.103 | 102 | 0.0823 | 82 | 70-130 | 22 | 35 | mg/kg | 02.16.18 16:13 | |
| Toluene | <0.00202 | 0.101 | 0.0956 | 95 | 0.0854 | 85 | 70-130 | 11 | 35 | mg/kg | 02.16.18 16:13 | |
| Ethylbenzene | <0.00202 | 0.101 | 0.0993 | 98 | 0.0887 | 89 | 71-129 | 11 | 35 | mg/kg | 02.16.18 16:13 | |
| m,p-Xylenes | <0.00403 | 0.202 | 0.194 | 96 | 0.173 | 86 | 70-135 | 11 | 35 | mg/kg | 02.16.18 16:13 | |
| o-Xylene | <0.00202 | 0.101 | 0.0972 | 96 | 0.0873 | 87 | 71-133 | 11 | 35 | mg/kg | 02.16.18 16:13 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 81 | | 92 | | 97 | | 80-120 | % | 02.16.18 16:13 |
| 4-Bromofluorobenzene | 115 | | 111 | | 115 | | 80-120 | % | 02.16.18 16:13 |

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

Seq Number: 3041453 Matrix: Soil Date Prep: 02.16.18

Parent Sample Id: 576500-001 MS Sample Id: 576500-001 S MSD Sample Id: 576500-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | 0.0996 | 0.0844 | 85 | 0.0807 | 81 | 70-130 | 4 | 35 | mg/kg | 02.16.18 17:03 | |
| Toluene | <0.00199 | 0.0996 | 0.0913 | 92 | 0.0851 | 85 | 70-130 | 7 | 35 | mg/kg | 02.16.18 17:03 | |
| Ethylbenzene | <0.00199 | 0.0996 | 0.0955 | 96 | 0.0882 | 88 | 71-129 | 8 | 35 | mg/kg | 02.16.18 17:03 | |
| m,p-Xylenes | <0.00398 | 0.199 | 0.187 | 94 | 0.172 | 86 | 70-135 | 8 | 35 | mg/kg | 02.16.18 17:03 | |
| o-Xylene | <0.00199 | 0.0996 | 0.0946 | 95 | 0.0865 | 87 | 71-133 | 9 | 35 | mg/kg | 02.16.18 17:03 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 92 | | 100 | | 80-120 | % | 02.16.18 17:03 |
| 4-Bromofluorobenzene | 111 | | 119 | | 80-120 | % | 02.16.18 17:03 |

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

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

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

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

# CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

*Setting the Standard since 1990*

Stafford,Texas (281-240-4200)
Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Quote #
Xenco Job # 576503

**Client / Reporting Information**

Company Name / Branch: LTE / Permian
Company Address: 3300 N. A Street Bldg 1 Suite 103 Midland TX 79705
Email: Abaker@ltenv.com
Phone No: 432-704-5178
Project Contact: Adrian Baker
Samplers's Name: [redacted] Williamson

**Project Information**

Project Name/Number: PLU Big Sinks 11 Federal
Project Location: NM
Invoice To: XTO Energy - Kyle Littrell
PO Number: 30-015-37147

**Analytical Information**

**Matrix Codes**

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

| No. | Field ID / Point of Collection | Collection: Sample Depth | Date | Time | Matrix | # of bottles | Number of preserved bottles: HCl | NaOH/Zn Acetate | HNO3 | H2SO4 | NaOH | NaHSO4 | MEOH | NONE | Btex EPA Method 8021 | TPH EPA Method 8015 | Chloride EPA Method 300.1 | Field Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SS01 | 6" | 2-13-18 | 16:10 | S | 1 | | | | | | | | X | X | X | X | |
| 2 | SS02 | | | 16:20 | | | | | | | | | | | | | | |
| 3 | SS03 | | | 16:30 | | | | | | | | | | | | | | |
| 4 | SS04 | | | 16:40 | | | | | | | | | | | | | | |
| 5 | SS05 | | | 16:50 | | | | | | | | | | | | | | |
| 6 | SS06 | | | 17:00 | | | | | | | | | | | | | | |
| 7 | SS07 | | | 17:10 | | | | | | | | | | | | | | |
| 8 | SS08 | | | 17:20 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | |

Temp: 3.9 IR ID:R-8
CF:(0-6: -0.2°C )
(6-23: +0.2°C)
Corrected Temp: 3.7

**Turnaround Time ( Business days)**

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

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

**Data Deliverable Information**

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

**Notes:**

Sampler: Danny Burns
API: 30-015-37147
2RP-3887

FED-EX / UPS: Tracking #

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

| | Relinquished by: | Date Time: | Received By: | Relinquished By: | Date Time: | Received By: |
|---|---|---|---|---|---|---|
| 1 | [signature] | 2-14-18 | 1 [signature] | 2 [signature] | 2-14-18 18:00 | 2 [signature] |
| 3 | | | 3 [signature] | 4 | 2-14-18 18:00 | 4 |
| 5 | | | 5 | Custody Seal # | Preserved where applicable | On Ice / Cooler Temp. / Thermo. Corr. Factor |

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

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

**Client:** LT Environmental, Inc.

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

**Work Order #:** 576503

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

**Temperature Measuring device used : R8**

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | 3.7 |
| #2 *Shipping container in good condition? | **Yes** |
| #3 *Samples received on ice? | **Yes** |
| #4 *Custody Seals intact on shipping container/ cooler? | **N/A** |
| #5 Custody Seals intact on sample bottles? | **N/A** |
| #6*Custody Seals Signed and dated? | **N/A** |
| #7 *Chain of Custody present? | **Yes** |
| #8 Any missing/extra samples? | **No** |
| #9 Chain of Custody signed when relinquished/ received? | **Yes** |
| #10 Chain of Custody agrees with sample labels/matrix? | **Yes** |
| #11 Container label(s) legible and intact? | **Yes** |
| #12 Samples in proper container/ bottle? | **Yes** |
| #13 Samples properly preserved? | **Yes** |
| #14 Sample container(s) intact? | **Yes** |
| #15 Sufficient sample amount for indicated test(s)? | **Yes** |
| #16 All samples received within hold time? | **Yes** |
| #17 Subcontract of sample(s)? | **No** |
| #18 Water VOC samples have zero headspace? | **N/A** |

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

Analyst: PH Device/Lot#:

**Checklist completed by:** Connie Hernandez Date: 02/15/2018

**Checklist reviewed by:** Jessica Kramer Date: 02/15/2018

# Analytical Report 619853

## for

## LT Environmental, Inc.

**Project Manager: Adrian Baker**

**PLU Big Sinks 11 Federal Battery**

**012918036**

**08-APR-19**

Collected By: Client

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

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

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

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

08-APR-19

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

Reference: XENCO Report No(s): **619853**
**PLU Big Sinks 11 Federal Battery**
Project Address: ---

**Adrian Baker**:

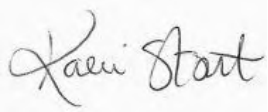
We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 619853. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory 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. 619853 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,



**Kalei Stout**
Midland Laboratory Director

# Sample Cross Reference 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| SW01 | S | 03-29-19 15:00 | 0 - 4 ft | 619853-001 |
| SW02 | S | 03-29-19 15:10 | 0 - 4 ft | 619853-002 |
| SW03 | S | 03-29-19 15:20 | 0 - 4 ft | 619853-003 |
| SW04 | S | 03-29-19 15:30 | 0 - 3 ft | 619853-004 |
| SW05 | S | 03-29-19 15:40 | 0 - 3 ft | 619853-005 |
| SW06 | S | 03-29-19 15:45 | 0 - 4 ft | 619853-006 |
| SW07 | S | 03-29-19 15:55 | 0 - 4 ft | 619853-007 |
| FS01 | S | 03-29-19 16:00 | 3 ft | 619853-008 |
| FS02 | S | 03-29-19 16:10 | 4 ft | 619853-009 |
| FS03 | S | 03-29-19 16:15 | 4 ft | 619853-010 |
| FS04 | S | 03-29-19 16:20 | 4 ft | 619853-011 |
| FS05 | S | 03-29-19 16:30 | 5 ft | 619853-012 |
| FS06 | S | 03-29-19 16:35 | 5 ft | 619853-013 |
| FS07 | S | 03-29-19 16:40 | 5 ft | 619853-014 |
| FS08 | S | 03-29-19 16:45 | 5 ft | 619853-015 |
| FS09 | S | 03-29-19 16:50 | 3 ft | 619853-016 |
| FS10 | S | 03-29-19 16:55 | 3 ft | 619853-017 |
| FS11 | S | 03-29-19 17:00 | 1 ft | 619853-018 |
| FS12 | S | 03-29-19 17:10 | 1 ft | 619853-019 |
| FS13 | S | 03-29-19 17:20 | 1 ft | 619853-020 |

# CASE NARRATIVE

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

***Project Name: PLU Big Sinks 11 Federal Battery***

Project ID: *012918036*
Work Order Number(s): *619853*

Report Date: *08-APR-19*
Date Received: *04/03/2019*

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3084841 BTEX by EPA 8021B
Lab Sample ID 619853-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Toluene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 619853-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020.
The Laboratory Control Sample for Toluene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected. Samples affected are: 619853-004,619853-019,619853-017,619853-008.

# Certificate of Analysis Summary 619853

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU Big Sinks 11 Federal Battery

**Project Id:** 012918036
**Contact:** Adrian Baker
**Project Location:** ---

**Date Received in Lab:** Wed Apr-03-19 11:25 am
**Report Date:** 08-APR-19
**Project Manager:** Kalei Stout

| *Analysis Requested* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 619853-001 | | 619853-002 | | 619853-003 | | 619853-004 | | 619853-005 | | 619853-006 | |
| | ***Field Id:*** | SW01 | | SW02 | | SW03 | | SW04 | | SW05 | | SW06 | |
| | ***Depth:*** | 0-4 ft | | 0-4 ft | | 0-4 ft | | 0-3 ft | | 0-3 ft | | 0-4 ft | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Mar-29-19 15:00 | | Mar-29-19 15:10 | | Mar-29-19 15:20 | | Mar-29-19 15:30 | | Mar-29-19 15:40 | | Mar-29-19 15:45 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Apr-05-19 15:00 | | Apr-05-19 15:00 | | Apr-05-19 15:00 | | Apr-05-19 15:00 | | Apr-05-19 15:00 | | Apr-05-19 15:00 | |
| | ***Analyzed:*** | Apr-05-19 18:16 | | Apr-05-19 18:35 | | Apr-05-19 18:55 | | Apr-05-19 19:14 | | Apr-05-19 19:33 | | Apr-05-19 19:52 | |
| | ***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 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 |
| Toluene | | 0.00266 | 0.00199 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00202 | 0.00202 | 0.00286 | 0.00200 | <0.00200 | 0.00200 |
| Ethylbenzene | | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 |
| m,p-Xylenes | | 0.00566 | 0.00398 | <0.00402 | 0.00402 | 0.00528 | 0.00398 | <0.00403 | 0.00403 | 0.0230 | 0.00399 | <0.00399 | 0.00399 |
| o-Xylene | | 0.00258 | 0.00199 | <0.00201 | 0.00201 | 0.00270 | 0.00199 | <0.00202 | 0.00202 | 0.0138 | 0.00200 | <0.00200 | 0.00200 |
| Total Xylenes | | 0.00824 | 0.00199 | <0.00201 | 0.00201 | 0.00798 | 0.00199 | <0.00202 | 0.00202 | 0.0368 | 0.00200 | <0.00200 | 0.00200 |
| Total BTEX | | 0.0109 | 0.00199 | <0.00201 | 0.00201 | 0.00798 | 0.00199 | <0.00202 | 0.00202 | 0.0397 | 0.00200 | <0.00200 | 0.00200 |
| **Inorganic Anions by EPA 300** | ***Extracted:*** | Apr-03-19 16:30 | | Apr-03-19 16:30 | | Apr-03-19 16:30 | | Apr-03-19 16:30 | | Apr-03-19 16:30 | | Apr-03-19 16:30 | |
| | ***Analyzed:*** | Apr-03-19 23:19 | | Apr-03-19 23:29 | | Apr-03-19 23:58 | | Apr-04-19 00:08 | | Apr-04-19 10:27 | | Apr-04-19 10:37 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 64.5 | 24.8 | 70.2 | 49.5 | 9.58 | 5.03 | 44.9 | 24.8 | 5.19 | 4.95 | 13.6 | 4.95 |
| **TPH by SW8015 Mod** | ***Extracted:*** | Apr-04-19 14:00 | | Apr-04-19 14:00 | | Apr-04-19 14:00 | | Apr-04-19 14:00 | | Apr-04-19 14:00 | | Apr-04-19 14:00 | |
| | ***Analyzed:*** | Apr-04-19 21:10 | | Apr-04-19 22:09 | | Apr-04-19 22:29 | | Apr-04-19 22:49 | | Apr-04-19 23:09 | | Apr-04-19 23:28 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | 20.0 | 15.0 | <14.9 | 14.9 | 19.9 | 15.0 | <15.0 | 15.0 | 66.5 | 15.0 | <15.0 | 15.0 |
| Diesel Range Organics (DRO) | | 792 | 15.0 | 404 | 14.9 | 629 | 15.0 | 56.6 | 15.0 | 838 | 15.0 | 221 | 15.0 |
| Motor Oil Range Hydrocarbons (MRO) | | 128 | 15.0 | 79.2 | 14.9 | 92.8 | 15.0 | <15.0 | 15.0 | 123 | 15.0 | 28.4 | 15.0 |
| Total TPH | | 940 | 15.0 | 483 | 14.9 | 742 | 15.0 | 56.6 | 15.0 | 1030 | 15.0 | 249 | 15.0 |
| Total GRO-DRO | | 812 | 15.0 | 404 | 14.9 | 649 | 15.0 | 56.6 | 15.0 | 905 | 15.0 | 221 | 15.0 |





Kalei Stout
Midland Laboratory Director

# Certificate of Analysis Summary 619853

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU Big Sinks 11 Federal Battery

**Project Id:** 012918036
**Contact:** Adrian Baker
**Project Location:** ---

**Date Received in Lab:** Wed Apr-03-19 11:25 am
**Report Date:** 08-APR-19
**Project Manager:** Kalei Stout

| *Analysis Requested* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 619853-007 | | 619853-008 | | 619853-009 | | 619853-010 | | 619853-011 | | 619853-012 | |
| | ***Field Id:*** | SW07 | | FS01 | | FS02 | | FS03 | | FS04 | | FS05 | |
| | ***Depth:*** | 0-4 ft | | 3- ft | | 4- ft | | 4- ft | | 4- ft | | 5- ft | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Mar-29-19 15:55 | | Mar-29-19 16:00 | | Mar-29-19 16:10 | | Mar-29-19 16:15 | | Mar-29-19 16:20 | | Mar-29-19 16:30 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Apr-05-19 15:00 | | Apr-05-19 15:00 | | Apr-05-19 15:00 | | Apr-05-19 15:00 | | Apr-05-19 15:00 | | Apr-05-19 15:00 | |
| | ***Analyzed:*** | Apr-05-19 20:12 | | Apr-05-19 20:31 | | Apr-05-19 20:50 | | Apr-05-19 21:09 | | Apr-05-19 22:24 | | Apr-05-19 22:44 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Benzene | | <0.00201 | 0.00201 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00199 | 0.00199 | <0.00202 | 0.00202 | <0.00198 | 0.00198 |
| Toluene | | 0.0108 | 0.00201 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00199 | 0.00199 | <0.00202 | 0.00202 | <0.00198 | 0.00198 |
| Ethylbenzene | | 0.00865 | 0.00201 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00199 | 0.00199 | <0.00202 | 0.00202 | <0.00198 | 0.00198 |
| m,p-Xylenes | | 0.0808 | 0.00402 | 0.0112 | 0.00401 | <0.00398 | 0.00398 | <0.00398 | 0.00398 | <0.00404 | 0.00404 | <0.00397 | 0.00397 |
| o-Xylene | | 0.0378 | 0.00201 | 0.00497 | 0.00200 | <0.00199 | 0.00199 | <0.00199 | 0.00199 | <0.00202 | 0.00202 | <0.00198 | 0.00198 |
| Total Xylenes | | 0.119 | 0.00201 | 0.0162 | 0.00200 | <0.00199 | 0.00199 | <0.00199 | 0.00199 | <0.00202 | 0.00202 | <0.00198 | 0.00198 |
| Total BTEX | | 0.138 | 0.00201 | 0.0162 | 0.00200 | <0.00199 | 0.00199 | <0.00199 | 0.00199 | <0.00202 | 0.00202 | <0.00198 | 0.00198 |
| **Inorganic Anions by EPA 300** | ***Extracted:*** | Apr-03-19 16:30 | | Apr-03-19 16:30 | | Apr-03-19 16:30 | | Apr-03-19 17:00 | | Apr-03-19 17:00 | | Apr-03-19 17:00 | |
| | ***Analyzed:*** | Apr-04-19 10:47 | | Apr-04-19 10:57 | | Apr-04-19 11:06 | | Apr-04-19 11:36 | | Apr-04-19 02:35 | | Apr-04-19 02:45 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 23.8 | 4.99 | 16.8 | 5.00 | 25.6 | 4.97 | 33.0 | 4.95 | 70.9 | 24.9 | 7.51 | 4.99 |
| **TPH by SW8015 Mod** | ***Extracted:*** | Apr-04-19 14:00 | | Apr-04-19 14:00 | | Apr-04-19 14:00 | | Apr-04-19 14:00 | | Apr-04-19 14:00 | | Apr-04-19 14:00 | |
| | ***Analyzed:*** | Apr-05-19 06:27 | | Apr-05-19 00:08 | | Apr-05-19 00:27 | | Apr-05-19 00:47 | | Apr-05-19 01:45 | | Apr-05-19 02:04 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | 127 | 14.9 | <15.0 | 15.0 | <15.0 | 15.0 | <14.9 | 14.9 | <15.0 | 15.0 | <15.0 | 15.0 |
| Diesel Range Organics (DRO) | | 1820 | 14.9 | 289 | 15.0 | 210 | 15.0 | 425 | 14.9 | 375 | 15.0 | 26.8 | 15.0 |
| Motor Oil Range Hydrocarbons (MRO) | | 259 | 14.9 | 57.5 | 15.0 | 35.1 | 15.0 | 67.4 | 14.9 | 58.9 | 15.0 | <15.0 | 15.0 |
| Total TPH | | 2210 | 14.9 | 347 | 15.0 | 245 | 15.0 | 492 | 14.9 | 434 | 15.0 | 26.8 | 15.0 |
| Total GRO-DRO | | 1950 | 14.9 | 289 | 15.0 | 210 | 15.0 | 425 | 14.9 | 375 | 15.0 | 26.8 | 15.0 |





Kalei Stout
Midland Laboratory Director

# Certificate of Analysis Summary 619853

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU Big Sinks 11 Federal Battery

**Project Id:** 012918036
**Contact:** Adrian Baker
**Project Location:** ---

**Date Received in Lab:** Wed Apr-03-19 11:25 am
**Report Date:** 08-APR-19
**Project Manager:** Kalei Stout

| *Analysis Requested* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 619853-013 | | 619853-014 | | 619853-015 | | 619853-016 | | 619853-017 | | 619853-018 | |
| | ***Field Id:*** | FS06 | | FS07 | | FS08 | | FS09 | | FS10 | | FS11 | |
| | ***Depth:*** | 5- ft | | 5- ft | | 5- ft | | 3- ft | | 3- ft | | 1- ft | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Mar-29-19 16:35 | | Mar-29-19 16:40 | | Mar-29-19 16:45 | | Mar-29-19 16:50 | | Mar-29-19 16:55 | | Mar-29-19 17:00 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Apr-05-19 15:00 | | Apr-05-19 15:00 | | Apr-05-19 15:00 | | Apr-05-19 15:00 | | Apr-05-19 15:00 | | Apr-05-19 15:00 | |
| | ***Analyzed:*** | Apr-05-19 23:03 | | Apr-05-19 23:22 | | Apr-05-19 23:41 | | Apr-06-19 00:00 | | Apr-06-19 00:19 | | Apr-06-19 00:39 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Benzene | | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00202 | 0.00202 | <0.00199 | 0.00199 |
| Toluene | | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | 0.00816 | 0.00202 | <0.00199 | 0.00199 |
| Ethylbenzene | | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | 0.0711 | 0.00202 | <0.00199 | 0.00199 |
| m,p-Xylenes | | <0.00402 | 0.00402 | <0.00398 | 0.00398 | <0.00402 | 0.00402 | <0.00398 | 0.00398 | 0.314 | 0.00403 | <0.00398 | 0.00398 |
| o-Xylene | | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | 0.205 | 0.00202 | <0.00199 | 0.00199 |
| Total Xylenes | | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | 0.519 | 0.00202 | <0.00199 | 0.00199 |
| Total BTEX | | <0.00201 | 0.00201 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00199 | 0.00199 | 0.598 | 0.00202 | <0.00199 | 0.00199 |
| **Inorganic Anions by EPA 300** | ***Extracted:*** | Apr-03-19 17:00 | | Apr-03-19 17:00 | | Apr-03-19 17:00 | | Apr-03-19 17:00 | | Apr-03-19 17:00 | | Apr-03-19 17:00 | |
| | ***Analyzed:*** | Apr-04-19 11:46 | | Apr-04-19 11:55 | | Apr-04-19 12:05 | | Apr-04-19 12:15 | | Apr-04-19 12:25 | | Apr-04-19 12:35 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 6.85 | 5.04 | 7.07 | 4.96 | 5.42 | 5.01 | 14.0 | 4.98 | 7.95 | 4.97 | 21.8 | 4.99 |
| **TPH by SW8015 Mod** | ***Extracted:*** | Apr-04-19 14:00 | | Apr-04-19 14:00 | | Apr-04-19 14:00 | | Apr-04-19 14:00 | | Apr-04-19 14:00 | | Apr-04-19 14:00 | |
| | ***Analyzed:*** | Apr-05-19 02:24 | | Apr-05-19 02:44 | | Apr-05-19 03:03 | | Apr-05-19 03:23 | | Apr-05-19 03:42 | | Apr-05-19 04:01 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | 410 | 15.0 | <14.9 | 14.9 |
| Diesel Range Organics (DRO) | | 37.5 | 15.0 | 27.3 | 15.0 | 28.2 | 15.0 | 155 | 15.0 | 1620 | 15.0 | 34.6 | 14.9 |
| Motor Oil Range Hydrocarbons (MRO) | | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | 19.2 | 15.0 | 165 | 15.0 | <14.9 | 14.9 |
| Total TPH | | 37.5 | 15.0 | 27.3 | 15.0 | 28.2 | 15.0 | 174 | 15.0 | 2200 | 15.0 | 34.6 | 14.9 |
| Total GRO-DRO | | 37.5 | 15.0 | 27.3 | 15.0 | 28.2 | 15.0 | 155 | 15.0 | 2030 | 15.0 | 34.6 | 14.9 |





Kalei Stout
Midland Laboratory Director

# Certificate of Analysis Summary 619853

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU Big Sinks 11 Federal Battery

**Project Id:** 012918036
**Contact:** Adrian Baker
**Project Location:** ---

**Date Received in Lab:** Wed Apr-03-19 11:25 am
**Report Date:** 08-APR-19
**Project Manager:** Kalei Stout

| *Analysis Requested* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 619853-019 | | 619853-020 | | | | | |
| | ***Field Id:*** | FS12 | | FS13 | | | | | |
| | ***Depth:*** | 1- ft | | 1- ft | | | | | |
| | ***Matrix:*** | SOIL | | SOIL | | | | | |
| | ***Sampled:*** | Mar-29-19 17:10 | | Mar-29-19 17:20 | | | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Apr-05-19 15:00 | | Apr-05-19 15:00 | | | | | |
| | ***Analyzed:*** | Apr-06-19 00:58 | | Apr-06-19 01:17 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Benzene | | <0.00200 | 0.00200 | <0.00201 | 0.00201 | | | | |
| Toluene | | <0.00200 | 0.00200 | <0.00201 | 0.00201 | | | | |
| Ethylbenzene | | <0.00200 | 0.00200 | <0.00201 | 0.00201 | | | | |
| m,p-Xylenes | | <0.00400 | 0.00400 | <0.00402 | 0.00402 | | | | |
| o-Xylene | | <0.00200 | 0.00200 | <0.00201 | 0.00201 | | | | |
| Total Xylenes | | <0.00200 | 0.00200 | <0.00201 | 0.00201 | | | | |
| Total BTEX | | <0.00200 | 0.00200 | <0.00201 | 0.00201 | | | | |
| **Inorganic Anions by EPA 300** | ***Extracted:*** | Apr-03-19 17:00 | | Apr-03-19 17:00 | | | | | |
| | ***Analyzed:*** | Apr-04-19 04:42 | | Apr-04-19 04:52 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Chloride | | 30.5 | 25.0 | 27.3 | 24.9 | | | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | Apr-04-19 14:00 | | Apr-04-19 14:00 | | | | | |
| | ***Analyzed:*** | Apr-05-19 04:21 | | Apr-05-19 04:40 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Gasoline Range Hydrocarbons (GRO) | | <15.0 | 15.0 | <15.0 | 15.0 | | | | |
| Diesel Range Organics (DRO) | | 60.2 | 15.0 | 69.3 | 15.0 | | | | |
| Motor Oil Range Hydrocarbons (MRO) | | <15.0 | 15.0 | <15.0 | 15.0 | | | | |
| Total TPH | | 60.2 | 15.0 | 69.3 | 15.0 | | | | |
| Total GRO-DRO | | 60.2 | 15.0 | 69.3 | 15.0 | | | | |





Kalei Stout
Midland Laboratory Director

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW01** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-001 | Date Collected: | 03.29.19 15.00 | Sample Depth: | 0 - 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 16.30 | Basis: | Wet Weight |
| Seq Number: | 3084528 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **64.5** | 24.8 | mg/kg | 04.03.19 23.19 | | 5 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **20.0** | 15.0 | mg/kg | 04.04.19 21.10 | | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **792** | 15.0 | mg/kg | 04.04.19 21.10 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **128** | 15.0 | mg/kg | 04.04.19 21.10 | | 1 |
| **Total TPH** | PHC635 | **940** | 15.0 | mg/kg | 04.04.19 21.10 | | 1 |
| **Total GRO-DRO** | PHC628 | **812** | 15.0 | mg/kg | 04.04.19 21.10 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 95 | % | 70-135 | 04.04.19 21.10 | |
| o-Terphenyl | 84-15-1 | 107 | % | 70-135 | 04.04.19 21.10 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW01** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-001 | Date Collected: | 03.29.19 15.00 | Sample Depth: | 0 - 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 04.05.19 18.16 | U | 1 |
| **Toluene** | 108-88-3 | **0.00266** | 0.00199 | mg/kg | 04.05.19 18.16 | | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 04.05.19 18.16 | U | 1 |
| **m,p-Xylenes** | 179601-23-1 | **0.00566** | 0.00398 | mg/kg | 04.05.19 18.16 | | 1 |
| **o-Xylene** | 95-47-6 | **0.00258** | 0.00199 | mg/kg | 04.05.19 18.16 | | 1 |
| **Total Xylenes** | 1330-20-7 | **0.00824** | 0.00199 | mg/kg | 04.05.19 18.16 | | 1 |
| **Total BTEX** | | **0.0109** | 0.00199 | mg/kg | 04.05.19 18.16 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 115 | % | 70-130 | 04.05.19 18.16 | |
| 1,4-Difluorobenzene | 540-36-3 | 96 | % | 70-130 | 04.05.19 18.16 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW02** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-002 | Date Collected: | 03.29.19 15.10 | Sample Depth: | 0 - 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 16.30 | Basis: | Wet Weight |
| Seq Number: | 3084528 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **70.2** | 49.5 | mg/kg | 04.03.19 23.29 | | 10 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <14.9 | 14.9 | mg/kg | 04.04.19 22.09 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **404** | 14.9 | mg/kg | 04.04.19 22.09 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **79.2** | 14.9 | mg/kg | 04.04.19 22.09 | | 1 |
| **Total TPH** | PHC635 | **483** | 14.9 | mg/kg | 04.04.19 22.09 | | 1 |
| **Total GRO-DRO** | PHC628 | **404** | 14.9 | mg/kg | 04.04.19 22.09 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 90 | % | 70-135 | 04.04.19 22.09 | |
| o-Terphenyl | 84-15-1 | 100 | % | 70-135 | 04.04.19 22.09 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW02** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-002 | Date Collected: | 03.29.19 15.10 | Sample Depth: | 0 - 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 04.05.19 18.35 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 04.05.19 18.35 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 04.05.19 18.35 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 04.05.19 18.35 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 04.05.19 18.35 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 04.05.19 18.35 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 04.05.19 18.35 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 105 | % | 70-130 | 04.05.19 18.35 | |
| 1,4-Difluorobenzene | 540-36-3 | 107 | % | 70-130 | 04.05.19 18.35 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW03** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-003 | Date Collected: | 03.29.19 15.20 | Sample Depth: | 0 - 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 16.30 | Basis: | Wet Weight |
| Seq Number: | 3084528 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **9.58** | 5.03 | mg/kg | 04.03.19 23.58 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **19.9** | 15.0 | mg/kg | 04.04.19 22.29 | | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **629** | 15.0 | mg/kg | 04.04.19 22.29 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **92.8** | 15.0 | mg/kg | 04.04.19 22.29 | | 1 |
| **Total TPH** | PHC635 | **742** | 15.0 | mg/kg | 04.04.19 22.29 | | 1 |
| **Total GRO-DRO** | PHC628 | **649** | 15.0 | mg/kg | 04.04.19 22.29 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 94 | % | 70-135 | 04.04.19 22.29 | |
| o-Terphenyl | 84-15-1 | 113 | % | 70-135 | 04.04.19 22.29 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW03** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-003 | Date Collected: | 03.29.19 15.20 | Sample Depth: | 0 - 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 04.05.19 18.55 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 04.05.19 18.55 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 04.05.19 18.55 | U | 1 |
| **m,p-Xylenes** | 179601-23-1 | **0.00528** | 0.00398 | mg/kg | 04.05.19 18.55 | | 1 |
| **o-Xylene** | 95-47-6 | **0.00270** | 0.00199 | mg/kg | 04.05.19 18.55 | | 1 |
| **Total Xylenes** | 1330-20-7 | **0.00798** | 0.00199 | mg/kg | 04.05.19 18.55 | | 1 |
| **Total BTEX** | | **0.00798** | 0.00199 | mg/kg | 04.05.19 18.55 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 106 | % | 70-130 | 04.05.19 18.55 | |
| 4-Bromofluorobenzene | 460-00-4 | 108 | % | 70-130 | 04.05.19 18.55 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW04** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-004 | Date Collected: | 03.29.19 15.30 | Sample Depth: | 0 - 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 16.30 | Basis: | Wet Weight |
| Seq Number: | 3084528 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **44.9** | 24.8 | mg/kg | 04.04.19 00.08 | | 5 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.04.19 22.49 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **56.6** | 15.0 | mg/kg | 04.04.19 22.49 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 04.04.19 22.49 | U | 1 |
| **Total TPH** | PHC635 | **56.6** | 15.0 | mg/kg | 04.04.19 22.49 | | 1 |
| **Total GRO-DRO** | PHC628 | **56.6** | 15.0 | mg/kg | 04.04.19 22.49 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 91 | % | 70-135 | 04.04.19 22.49 | |
| o-Terphenyl | 84-15-1 | 92 | % | 70-135 | 04.04.19 22.49 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW04** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-004 | Date Collected: | 03.29.19 15.30 | Sample Depth: | 0 - 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 04.05.19 19.14 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 04.05.19 19.14 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 04.05.19 19.14 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00403 | 0.00403 | mg/kg | 04.05.19 19.14 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 04.05.19 19.14 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 04.05.19 19.14 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 04.05.19 19.14 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 137 | % | 70-130 | 04.05.19 19.14 | ** |
| 1,4-Difluorobenzene | 540-36-3 | 99 | % | 70-130 | 04.05.19 19.14 | |

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW05** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-005 | Date Collected: | 03.29.19 15.40 | Sample Depth: | 0 - 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 16.30 | Basis: | Wet Weight |
| Seq Number: | 3084528 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **5.19** | 4.95 | mg/kg | 04.04.19 10.27 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **66.5** | 15.0 | mg/kg | 04.04.19 23.09 | | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **838** | 15.0 | mg/kg | 04.04.19 23.09 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **123** | 15.0 | mg/kg | 04.04.19 23.09 | | 1 |
| **Total TPH** | PHC635 | **1030** | 15.0 | mg/kg | 04.04.19 23.09 | | 1 |
| **Total GRO-DRO** | PHC628 | **905** | 15.0 | mg/kg | 04.04.19 23.09 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 99 | % | 70-135 | 04.04.19 23.09 | |
| o-Terphenyl | 84-15-1 | 106 | % | 70-135 | 04.04.19 23.09 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW05** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-005 | Date Collected: | 03.29.19 15.40 | Sample Depth: | 0 - 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 04.05.19 19.33 | U | 1 |
| **Toluene** | 108-88-3 | **0.00286** | 0.00200 | mg/kg | 04.05.19 19.33 | | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 04.05.19 19.33 | U | 1 |
| **m,p-Xylenes** | 179601-23-1 | **0.0230** | 0.00399 | mg/kg | 04.05.19 19.33 | | 1 |
| **o-Xylene** | 95-47-6 | **0.0138** | 0.00200 | mg/kg | 04.05.19 19.33 | | 1 |
| **Total Xylenes** | 1330-20-7 | **0.0368** | 0.00200 | mg/kg | 04.05.19 19.33 | | 1 |
| **Total BTEX** | | **0.0397** | 0.00200 | mg/kg | 04.05.19 19.33 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 117 | % | 70-130 | 04.05.19 19.33 | |
| 1,4-Difluorobenzene | 540-36-3 | 99 | % | 70-130 | 04.05.19 19.33 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW06** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-006 | Date Collected: | 03.29.19 15.45 | Sample Depth: | 0 - 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 16.30 | Basis: | Wet Weight |
| Seq Number: | 3084528 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **13.6** | 4.95 | mg/kg | 04.04.19 10.37 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.04.19 23.28 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **221** | 15.0 | mg/kg | 04.04.19 23.28 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **28.4** | 15.0 | mg/kg | 04.04.19 23.28 | | 1 |
| **Total TPH** | PHC635 | **249** | 15.0 | mg/kg | 04.04.19 23.28 | | 1 |
| **Total GRO-DRO** | PHC628 | **221** | 15.0 | mg/kg | 04.04.19 23.28 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 92 | % | 70-135 | 04.04.19 23.28 | |
| o-Terphenyl | 84-15-1 | 97 | % | 70-135 | 04.04.19 23.28 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW06** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-006 | Date Collected: | 03.29.19 15.45 | Sample Depth: | 0 - 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 04.05.19 19.52 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 04.05.19 19.52 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 04.05.19 19.52 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 04.05.19 19.52 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 04.05.19 19.52 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 04.05.19 19.52 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 04.05.19 19.52 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 106 | % | 70-130 | 04.05.19 19.52 | |
| 4-Bromofluorobenzene | 460-00-4 | 108 | % | 70-130 | 04.05.19 19.52 | |

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW07** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-007 | Date Collected: | 03.29.19 15.55 | Sample Depth: | 0 - 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 16.30 | Basis: | Wet Weight |
| Seq Number: | 3084528 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **23.8** | 4.99 | mg/kg | 04.04.19 10.47 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **127** | 14.9 | mg/kg | 04.05.19 06.27 | | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **1820** | 14.9 | mg/kg | 04.05.19 06.27 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **259** | 14.9 | mg/kg | 04.05.19 06.27 | | 1 |
| **Total TPH** | PHC635 | **2210** | 14.9 | mg/kg | 04.05.19 06.27 | | 1 |
| **Total GRO-DRO** | PHC628 | **1950** | 14.9 | mg/kg | 04.05.19 06.27 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 99 | % | 70-135 | 04.05.19 06.27 | |
| o-Terphenyl | 84-15-1 | 125 | % | 70-135 | 04.05.19 06.27 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW07** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-007 | Date Collected: | 03.29.19 15.55 | Sample Depth: | 0 - 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 04.05.19 20.12 | U | 1 |
| **Toluene** | 108-88-3 | **0.0108** | 0.00201 | mg/kg | 04.05.19 20.12 | | 1 |
| **Ethylbenzene** | 100-41-4 | **0.00865** | 0.00201 | mg/kg | 04.05.19 20.12 | | 1 |
| **m,p-Xylenes** | 179601-23-1 | **0.0808** | 0.00402 | mg/kg | 04.05.19 20.12 | | 1 |
| **o-Xylene** | 95-47-6 | **0.0378** | 0.00201 | mg/kg | 04.05.19 20.12 | | 1 |
| **Total Xylenes** | 1330-20-7 | **0.119** | 0.00201 | mg/kg | 04.05.19 20.12 | | 1 |
| **Total BTEX** | | **0.138** | 0.00201 | mg/kg | 04.05.19 20.12 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 101 | % | 70-130 | 04.05.19 20.12 | |
| 4-Bromofluorobenzene | 460-00-4 | 120 | % | 70-130 | 04.05.19 20.12 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS01** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-008 | Date Collected: | 03.29.19 16.00 | Sample Depth: | 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 16.30 | Basis: | Wet Weight |
| Seq Number: | 3084528 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **16.8** | 5.00 | mg/kg | 04.04.19 10.57 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.05.19 00.08 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **289** | 15.0 | mg/kg | 04.05.19 00.08 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **57.5** | 15.0 | mg/kg | 04.05.19 00.08 | | 1 |
| **Total TPH** | PHC635 | **347** | 15.0 | mg/kg | 04.05.19 00.08 | | 1 |
| **Total GRO-DRO** | PHC628 | **289** | 15.0 | mg/kg | 04.05.19 00.08 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 92 | % | 70-135 | 04.05.19 00.08 | |
| o-Terphenyl | 84-15-1 | 95 | % | 70-135 | 04.05.19 00.08 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS01** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-008 | Date Collected: | 03.29.19 16.00 | Sample Depth: | 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 04.05.19 20.31 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 04.05.19 20.31 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 04.05.19 20.31 | U | 1 |
| **m,p-Xylenes** | 179601-23-1 | **0.0112** | 0.00401 | mg/kg | 04.05.19 20.31 | | 1 |
| **o-Xylene** | 95-47-6 | **0.00497** | 0.00200 | mg/kg | 04.05.19 20.31 | | 1 |
| **Total Xylenes** | 1330-20-7 | **0.0162** | 0.00200 | mg/kg | 04.05.19 20.31 | | 1 |
| **Total BTEX** | | **0.0162** | 0.00200 | mg/kg | 04.05.19 20.31 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 132 | % | 70-130 | 04.05.19 20.31 | ** |
| 1,4-Difluorobenzene | 540-36-3 | 116 | % | 70-130 | 04.05.19 20.31 | |

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS02** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-009 | Date Collected: | 03.29.19 16.10 | Sample Depth: | 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 16.30 | Basis: | Wet Weight |
| Seq Number: | 3084528 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **25.6** | 4.97 | mg/kg | 04.04.19 11.06 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.05.19 00.27 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **210** | 15.0 | mg/kg | 04.05.19 00.27 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **35.1** | 15.0 | mg/kg | 04.05.19 00.27 | | 1 |
| **Total TPH** | PHC635 | **245** | 15.0 | mg/kg | 04.05.19 00.27 | | 1 |
| **Total GRO-DRO** | PHC628 | **210** | 15.0 | mg/kg | 04.05.19 00.27 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 92 | % | 70-135 | 04.05.19 00.27 | |
| o-Terphenyl | 84-15-1 | 96 | % | 70-135 | 04.05.19 00.27 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS02** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-009 | Date Collected: | 03.29.19 16.10 | Sample Depth: | 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 04.05.19 20.50 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 04.05.19 20.50 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 04.05.19 20.50 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 04.05.19 20.50 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 04.05.19 20.50 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 04.05.19 20.50 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 04.05.19 20.50 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 103 | % | 70-130 | 04.05.19 20.50 | |
| 1,4-Difluorobenzene | 540-36-3 | 107 | % | 70-130 | 04.05.19 20.50 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS03** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-010 | Date Collected: | 03.29.19 16.15 | Sample Depth: | 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3084530 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **33.0** | 4.95 | mg/kg | 04.04.19 11.36 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <14.9 | 14.9 | mg/kg | 04.05.19 00.47 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **425** | 14.9 | mg/kg | 04.05.19 00.47 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **67.4** | 14.9 | mg/kg | 04.05.19 00.47 | | 1 |
| **Total TPH** | PHC635 | **492** | 14.9 | mg/kg | 04.05.19 00.47 | | 1 |
| **Total GRO-DRO** | PHC628 | **425** | 14.9 | mg/kg | 04.05.19 00.47 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 92 | % | 70-135 | 04.05.19 00.47 | |
| o-Terphenyl | 84-15-1 | 100 | % | 70-135 | 04.05.19 00.47 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS03** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-010 | Date Collected: | 03.29.19 16.15 | Sample Depth: | 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 04.05.19 21.09 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 04.05.19 21.09 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 04.05.19 21.09 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 04.05.19 21.09 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 04.05.19 21.09 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 04.05.19 21.09 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 04.05.19 21.09 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 107 | % | 70-130 | 04.05.19 21.09 | |
| 4-Bromofluorobenzene | 460-00-4 | 104 | % | 70-130 | 04.05.19 21.09 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS04** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-011 | Date Collected: | 03.29.19 16.20 | Sample Depth: | 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3084530 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **70.9** | 24.9 | mg/kg | 04.04.19 02.35 | | 5 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.05.19 01.45 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **375** | 15.0 | mg/kg | 04.05.19 01.45 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **58.9** | 15.0 | mg/kg | 04.05.19 01.45 | | 1 |
| **Total TPH** | PHC635 | **434** | 15.0 | mg/kg | 04.05.19 01.45 | | 1 |
| **Total GRO-DRO** | PHC628 | **375** | 15.0 | mg/kg | 04.05.19 01.45 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 92 | % | 70-135 | 04.05.19 01.45 | |
| o-Terphenyl | 84-15-1 | 100 | % | 70-135 | 04.05.19 01.45 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS04** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-011 | Date Collected: | 03.29.19 16.20 | Sample Depth: | 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 04.05.19 22.24 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 04.05.19 22.24 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 04.05.19 22.24 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00404 | 0.00404 | mg/kg | 04.05.19 22.24 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 04.05.19 22.24 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 04.05.19 22.24 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 04.05.19 22.24 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 122 | % | 70-130 | 04.05.19 22.24 | |
| 1,4-Difluorobenzene | 540-36-3 | 97 | % | 70-130 | 04.05.19 22.24 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS05** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-012 | Date Collected: | 03.29.19 16.30 | Sample Depth: | 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3084530 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **7.51** | 4.99 | mg/kg | 04.04.19 02.45 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.05.19 02.04 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **26.8** | 15.0 | mg/kg | 04.05.19 02.04 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 04.05.19 02.04 | U | 1 |
| **Total TPH** | PHC635 | **26.8** | 15.0 | mg/kg | 04.05.19 02.04 | | 1 |
| **Total GRO-DRO** | PHC628 | **26.8** | 15.0 | mg/kg | 04.05.19 02.04 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 90 | % | 70-135 | 04.05.19 02.04 | |
| o-Terphenyl | 84-15-1 | 91 | % | 70-135 | 04.05.19 02.04 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS05** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-012 | Date Collected: | 03.29.19 16.30 | Sample Depth: | 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00198 | 0.00198 | mg/kg | 04.05.19 22.44 | U | 1 |
| Toluene | 108-88-3 | <0.00198 | 0.00198 | mg/kg | 04.05.19 22.44 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00198 | 0.00198 | mg/kg | 04.05.19 22.44 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00397 | 0.00397 | mg/kg | 04.05.19 22.44 | U | 1 |
| o-Xylene | 95-47-6 | <0.00198 | 0.00198 | mg/kg | 04.05.19 22.44 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00198 | 0.00198 | mg/kg | 04.05.19 22.44 | U | 1 |
| Total BTEX | | <0.00198 | 0.00198 | mg/kg | 04.05.19 22.44 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 107 | % | 70-130 | 04.05.19 22.44 | |
| 4-Bromofluorobenzene | 460-00-4 | 104 | % | 70-130 | 04.05.19 22.44 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS06** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-013 | Date Collected: | 03.29.19 16.35 | Sample Depth: | 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3084530 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **6.85** | 5.04 | mg/kg | 04.04.19 11.46 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.05.19 02.24 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **37.5** | 15.0 | mg/kg | 04.05.19 02.24 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 04.05.19 02.24 | U | 1 |
| **Total TPH** | PHC635 | **37.5** | 15.0 | mg/kg | 04.05.19 02.24 | | 1 |
| **Total GRO-DRO** | PHC628 | **37.5** | 15.0 | mg/kg | 04.05.19 02.24 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 91 | % | 70-135 | 04.05.19 02.24 | |
| o-Terphenyl | 84-15-1 | 93 | % | 70-135 | 04.05.19 02.24 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS06** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-013 | Date Collected: | 03.29.19 16.35 | Sample Depth: | 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 04.05.19 23.03 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 04.05.19 23.03 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 04.05.19 23.03 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 04.05.19 23.03 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 04.05.19 23.03 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 04.05.19 23.03 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 04.05.19 23.03 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 104 | % | 70-130 | 04.05.19 23.03 | |
| 1,4-Difluorobenzene | 540-36-3 | 108 | % | 70-130 | 04.05.19 23.03 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS07** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-014 | Date Collected: | 03.29.19 16.40 | Sample Depth: | 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3084530 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **7.07** | 4.96 | mg/kg | 04.04.19 11.55 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.05.19 02.44 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **27.3** | 15.0 | mg/kg | 04.05.19 02.44 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 04.05.19 02.44 | U | 1 |
| **Total TPH** | PHC635 | **27.3** | 15.0 | mg/kg | 04.05.19 02.44 | | 1 |
| **Total GRO-DRO** | PHC628 | **27.3** | 15.0 | mg/kg | 04.05.19 02.44 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 90 | % | 70-135 | 04.05.19 02.44 | |
| o-Terphenyl | 84-15-1 | 92 | % | 70-135 | 04.05.19 02.44 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS07** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-014 | Date Collected: | 03.29.19 16.40 | Sample Depth: | 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 04.05.19 23.22 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 04.05.19 23.22 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 04.05.19 23.22 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 04.05.19 23.22 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 04.05.19 23.22 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 04.05.19 23.22 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 04.05.19 23.22 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 107 | % | 70-130 | 04.05.19 23.22 | |
| 4-Bromofluorobenzene | 460-00-4 | 101 | % | 70-130 | 04.05.19 23.22 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS08** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-015 | Date Collected: | 03.29.19 16.45 | Sample Depth: | 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3084530 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **5.42** | 5.01 | mg/kg | 04.04.19 12.05 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.05.19 03.03 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **28.2** | 15.0 | mg/kg | 04.05.19 03.03 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 04.05.19 03.03 | U | 1 |
| **Total TPH** | PHC635 | **28.2** | 15.0 | mg/kg | 04.05.19 03.03 | | 1 |
| **Total GRO-DRO** | PHC628 | **28.2** | 15.0 | mg/kg | 04.05.19 03.03 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 92 | % | 70-135 | 04.05.19 03.03 | |
| o-Terphenyl | 84-15-1 | 93 | % | 70-135 | 04.05.19 03.03 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS08** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-015 | Date Collected: | 03.29.19 16.45 | Sample Depth: | 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 04.05.19 23.41 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 04.05.19 23.41 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 04.05.19 23.41 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 04.05.19 23.41 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 04.05.19 23.41 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 04.05.19 23.41 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 04.05.19 23.41 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 105 | % | 70-130 | 04.05.19 23.41 | |
| 1,4-Difluorobenzene | 540-36-3 | 107 | % | 70-130 | 04.05.19 23.41 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS09** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-016 | Date Collected: | 03.29.19 16.50 | Sample Depth: | 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3084530 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **14.0** | 4.98 | mg/kg | 04.04.19 12.15 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.05.19 03.23 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **155** | 15.0 | mg/kg | 04.05.19 03.23 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **19.2** | 15.0 | mg/kg | 04.05.19 03.23 | | 1 |
| **Total TPH** | PHC635 | **174** | 15.0 | mg/kg | 04.05.19 03.23 | | 1 |
| **Total GRO-DRO** | PHC628 | **155** | 15.0 | mg/kg | 04.05.19 03.23 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 91 | % | 70-135 | 04.05.19 03.23 | |
| o-Terphenyl | 84-15-1 | 93 | % | 70-135 | 04.05.19 03.23 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS09** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-016 | Date Collected: | 03.29.19 16.50 | Sample Depth: | 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 04.06.19 00.00 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 04.06.19 00.00 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 04.06.19 00.00 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 04.06.19 00.00 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 04.06.19 00.00 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 04.06.19 00.00 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 04.06.19 00.00 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 106 | % | 70-130 | 04.06.19 00.00 | |
| 1,4-Difluorobenzene | 540-36-3 | 107 | % | 70-130 | 04.06.19 00.00 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS10** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-017 | Date Collected: | 03.29.19 16.55 | Sample Depth: | 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3084530 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **7.95** | 4.97 | mg/kg | 04.04.19 12.25 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **410** | 15.0 | mg/kg | 04.05.19 03.42 | | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **1620** | 15.0 | mg/kg | 04.05.19 03.42 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **165** | 15.0 | mg/kg | 04.05.19 03.42 | | 1 |
| **Total TPH** | PHC635 | **2200** | 15.0 | mg/kg | 04.05.19 03.42 | | 1 |
| **Total GRO-DRO** | PHC628 | **2030** | 15.0 | mg/kg | 04.05.19 03.42 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 112 | % | 70-135 | 04.05.19 03.42 | |
| o-Terphenyl | 84-15-1 | 120 | % | 70-135 | 04.05.19 03.42 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS10** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-017 | Date Collected: | 03.29.19 16.55 | Sample Depth: | 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 04.06.19 00.19 | U | 1 |
| **Toluene** | 108-88-3 | **0.00816** | 0.00202 | mg/kg | 04.06.19 00.19 | | 1 |
| **Ethylbenzene** | 100-41-4 | **0.0711** | 0.00202 | mg/kg | 04.06.19 00.19 | | 1 |
| **m,p-Xylenes** | 179601-23-1 | **0.314** | 0.00403 | mg/kg | 04.06.19 00.19 | | 1 |
| **o-Xylene** | 95-47-6 | **0.205** | 0.00202 | mg/kg | 04.06.19 00.19 | | 1 |
| **Total Xylenes** | 1330-20-7 | **0.519** | 0.00202 | mg/kg | 04.06.19 00.19 | | 1 |
| **Total BTEX** | | **0.598** | 0.00202 | mg/kg | 04.06.19 00.19 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 99 | % | 70-130 | 04.06.19 00.19 | |
| 4-Bromofluorobenzene | 460-00-4 | 209 | % | 70-130 | 04.06.19 00.19 | ** |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS11** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-018 | Date Collected: | 03.29.19 17.00 | Sample Depth: | 1 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3084530 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **21.8** | 4.99 | mg/kg | 04.04.19 12.35 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <14.9 | 14.9 | mg/kg | 04.05.19 04.01 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **34.6** | 14.9 | mg/kg | 04.05.19 04.01 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <14.9 | 14.9 | mg/kg | 04.05.19 04.01 | U | 1 |
| **Total TPH** | PHC635 | **34.6** | 14.9 | mg/kg | 04.05.19 04.01 | | 1 |
| **Total GRO-DRO** | PHC628 | **34.6** | 14.9 | mg/kg | 04.05.19 04.01 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 90 | % | 70-135 | 04.05.19 04.01 | |
| o-Terphenyl | 84-15-1 | 92 | % | 70-135 | 04.05.19 04.01 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS11** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-018 | Date Collected: | 03.29.19 17.00 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 04.06.19 00.39 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 04.06.19 00.39 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 04.06.19 00.39 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 04.06.19 00.39 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 04.06.19 00.39 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 04.06.19 00.39 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 04.06.19 00.39 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 108 | % | 70-130 | 04.06.19 00.39 | |
| 1,4-Difluorobenzene | 540-36-3 | 107 | % | 70-130 | 04.06.19 00.39 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS12** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-019 | Date Collected: | 03.29.19 17.10 | Sample Depth: | 1 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3084530 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **30.5** | 25.0 | mg/kg | 04.04.19 04.42 | | 5 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.05.19 04.21 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **60.2** | 15.0 | mg/kg | 04.05.19 04.21 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 04.05.19 04.21 | U | 1 |
| **Total TPH** | PHC635 | **60.2** | 15.0 | mg/kg | 04.05.19 04.21 | | 1 |
| **Total GRO-DRO** | PHC628 | **60.2** | 15.0 | mg/kg | 04.05.19 04.21 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 92 | % | 70-135 | 04.05.19 04.21 | |
| o-Terphenyl | 84-15-1 | 92 | % | 70-135 | 04.05.19 04.21 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS12** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-019 | Date Collected: | 03.29.19 17.10 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 04.06.19 00.58 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 04.06.19 00.58 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 04.06.19 00.58 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00400 | 0.00400 | mg/kg | 04.06.19 00.58 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 04.06.19 00.58 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 04.06.19 00.58 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 04.06.19 00.58 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 98 | % | 70-130 | 04.06.19 00.58 | |
| 4-Bromofluorobenzene | 460-00-4 | 131 | % | 70-130 | 04.06.19 00.58 | ** |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS13** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-020 | Date Collected: | 03.29.19 17.20 | Sample Depth: | 1 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Inorganic Anions by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.03.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3084530 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **27.3** | 24.9 | mg/kg | 04.04.19 04.52 | | 5 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.04.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3084705 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.05.19 04.40 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **69.3** | 15.0 | mg/kg | 04.05.19 04.40 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 04.05.19 04.40 | U | 1 |
| **Total TPH** | PHC635 | **69.3** | 15.0 | mg/kg | 04.05.19 04.40 | | 1 |
| **Total GRO-DRO** | PHC628 | **69.3** | 15.0 | mg/kg | 04.05.19 04.40 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 91 | % | 70-135 | 04.05.19 04.40 | |
| o-Terphenyl | 84-15-1 | 91 | % | 70-135 | 04.05.19 04.40 | |

# Certificate of Analytical Results 619853

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS13** | Matrix: | Soil | Date Received: | 04.03.19 11.25 |
| Lab Sample Id: | 619853-020 | Date Collected: | 03.29.19 17.20 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3084841 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 04.06.19 01.17 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 04.06.19 01.17 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 04.06.19 01.17 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 04.06.19 01.17 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 04.06.19 01.17 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 04.06.19 01.17 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 04.06.19 01.17 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 123 | % | 70-130 | 04.06.19 01.17 | |
| 1,4-Difluorobenzene | 540-36-3 | 97 | % | 70-130 | 04.06.19 01.17 | |

# Flagging Criteria

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

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

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

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

**F** RPD exceeded lab control limits.

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

**U** Analyte was not detected.

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

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

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

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

** Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

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

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

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

+ NELAC certification not offered for this compound.

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

# QC Summary 619853

## LT Environmental, Inc.

PLU Big Sinks 11 Federal Battery

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3084528 Matrix: Solid Date Prep: 04.03.19
MB Sample Id: 7674999-1-BLK LCS Sample Id: 7674999-1-BKS LCSD Sample Id: 7674999-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.858 | 250 | 272 | 109 | 272 | 109 | 90-110 | 0 | 20 | mg/kg | 04.03.19 20:13 | |

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3084530 Matrix: Solid Date Prep: 04.03.19
MB Sample Id: 7675002-1-BLK LCS Sample Id: 7675002-1-BKS LCSD Sample Id: 7675002-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 0.977 | 250 | 267 | 107 | 267 | 107 | 90-110 | 0 | 20 | mg/kg | 04.04.19 01:36 | |

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3084528 Matrix: Soil Date Prep: 04.03.19
Parent Sample Id: 618636-010 MS Sample Id: 618636-010 S MSD Sample Id: 618636-010 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 15.3 | 250 | 293 | 111 | 292 | 111 | 90-110 | 0 | 20 | mg/kg | 04.03.19 20:42 | X |

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3084528 Matrix: Soil Date Prep: 04.03.19
Parent Sample Id: 618636-011 MS Sample Id: 618636-011 S MSD Sample Id: 618636-011 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 32.6 | 250 | 310 | 111 | 309 | 111 | 90-110 | 0 | 20 | mg/kg | 04.03.19 22:59 | X |

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3084530 Matrix: Soil Date Prep: 04.03.19
Parent Sample Id: 619598-002 MS Sample Id: 619598-002 S MSD Sample Id: 619598-002 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 43.5 | 252 | 317 | 109 | 317 | 109 | 90-110 | 0 | 20 | mg/kg | 04.04.19 02:05 | |

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 619853

## LT Environmental, Inc.

PLU Big Sinks 11 Federal Battery

**Analytical Method:** **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3084530 Matrix: Soil Date Prep: 04.03.19
Parent Sample Id: 619598-003 MS Sample Id: 619598-003 S MSD Sample Id: 619598-003 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 35.1 | 250 | 307 | 109 | 305 | 108 | 90-110 | 1 | 20 | mg/kg | 04.04.19 04:23 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3084705 Matrix: Solid Date Prep: 04.04.19
MB Sample Id: 7675081-1-BLK LCS Sample Id: 7675081-1-BKS LCSD Sample Id: 7675081-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <8.00 | 1000 | 1030 | 103 | 998 | 100 | 70-135 | 3 | 20 | mg/kg | 04.04.19 20:30 | |
| Diesel Range Organics (DRO) | <8.13 | 1000 | 1110 | 111 | 1050 | 105 | 70-135 | 6 | 20 | mg/kg | 04.04.19 20:30 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 98 | | 122 | | 130 | | 70-135 | % | 04.04.19 20:30 |
| o-Terphenyl | 100 | | 124 | | 125 | | 70-135 | % | 04.04.19 20:30 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3084705 Matrix: Soil Date Prep: 04.04.19
Parent Sample Id: 619853-001 MS Sample Id: 619853-001 S MSD Sample Id: 619853-001 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) | 20.0 | 997 | 940 | 92 | 952 | 93 | 70-135 | 1 | 20 | mg/kg | 04.04.19 21:29 | |
| Diesel Range Organics (DRO) | 792 | 997 | 1630 | 84 | 1620 | 83 | 70-135 | 1 | 20 | mg/kg | 04.04.19 21:29 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 108 | | 113 | | 70-135 | % | 04.04.19 21:29 |
| o-Terphenyl | 110 | | 109 | | 70-135 | % | 04.04.19 21:29 |

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

# QC Summary 619853

## LT Environmental, Inc.

PLU Big Sinks 11 Federal Battery

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

Seq Number: 3084841 Matrix: Solid Date Prep: 04.05.19

MB Sample Id: 7675216-1-BLK LCS Sample Id: 7675216-1-BKS LCSD Sample Id: 7675216-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000386 | 0.100 | 0.0975 | 98 | 0.0954 | 96 | 70-130 | 2 | 35 | mg/kg | 04.05.19 16:23 | |
| Toluene | <0.000457 | 0.100 | 0.0923 | 92 | 0.0907 | 91 | 70-130 | 2 | 35 | mg/kg | 04.05.19 16:23 | |
| Ethylbenzene | <0.00201 | 0.100 | 0.0940 | 94 | 0.0926 | 93 | 70-130 | 2 | 35 | mg/kg | 04.05.19 16:23 | |
| m,p-Xylenes | <0.00102 | 0.201 | 0.180 | 90 | 0.178 | 89 | 70-130 | 1 | 35 | mg/kg | 04.05.19 16:23 | |
| o-Xylene | <0.00201 | 0.100 | 0.0900 | 90 | 0.0896 | 90 | 70-130 | 0 | 35 | mg/kg | 04.05.19 16:23 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 106 | | 101 | | 101 | | 70-130 | % | 04.05.19 16:23 |
| 4-Bromofluorobenzene | 94 | | 91 | | 93 | | 70-130 | % | 04.05.19 16:23 |

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

Seq Number: 3084841 Matrix: Soil Date Prep: 04.05.19

Parent Sample Id: 619853-001 MS Sample Id: 619853-001 S MSD Sample Id: 619853-001 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 | 0.0805 | 81 | 0.0813 | 82 | 70-130 | 1 | 35 | mg/kg | 04.05.19 17:01 | |
| Toluene | 0.00266 | 0.100 | 0.0731 | 70 | 0.0676 | 65 | 70-130 | 8 | 35 | mg/kg | 04.05.19 17:01 | X |
| Ethylbenzene | 0.00128 | 0.100 | 0.0641 | 63 | 0.0562 | 55 | 70-130 | 13 | 35 | mg/kg | 04.05.19 17:01 | X |
| m,p-Xylenes | 0.00566 | 0.200 | 0.125 | 60 | 0.107 | 51 | 70-130 | 16 | 35 | mg/kg | 04.05.19 17:01 | X |
| o-Xylene | 0.00258 | 0.100 | 0.0648 | 62 | 0.0559 | 54 | 70-130 | 15 | 35 | mg/kg | 04.05.19 17:01 | X |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 101 | | 105 | | 70-130 | % | 04.05.19 17:01 |
| 4-Bromofluorobenzene | 107 | | 101 | | 70-130 | % | 04.05.19 17:01 |

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

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

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

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

# Chain of Custody

Work Order No: 619853

XENCO LABORATORIES

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

www.xenco.com Page 1 of 2

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

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | PLU Big Sinks 11 Federal Battery | Turn Around | |
| Project Number: | 012918036 | Routine | ☒ |
| P.O. Number: | 2RP 3887 | Rush: | |
| Sampler's Name: | L. Laumbach | Due Date: | 4/8/2019 |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes (No) | Wet Ice: | (Yes) No |
| Temperature (°C): | 0.5/0.4 | Thermometer ID | VE |
| Received Intact: | (Yes) No | | |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: | -0.1 |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| SW01 | S | 03/29/2019 | 15:00 | 0-4' | 2 | X | X | X |
| SW02 | S | | 15:10 | 0-4' | 2 | | | |
| SW03 | S | | 15:20 | 0-4' | 2 | | | |
| SW04 | S | | 15:30 | 0-3' | 2 | | | |
| SW05 | S | | 15:40 | 0-3' | 2 | | | |
| SW06 | S | | 15:45 | 0-4' | 2 | | | |
| SW07 | S | | 15:55 | 0-4' | 2 | | | |
| FS01 | S | | 16:00 | 3' | 2 | | | |
| FS02 | S | | 16:10 | 4' | 2 | | | |
| FS03 | S | | 16:15 | 4' | 2 | | | |

**Work Order Notes**

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

**Sample Comments**

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

*Circle Method(s) and Metal(s) to be analyzed* **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg



| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|
| 1 | | | 04/01/2019 17:17 | 2 | | 4/3/19 1125 |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date 051418 Rev. 2018.1

Final 1.000

Page 53 of 55

# 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
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

**Work Order No:** 619853

www.xenco.com Page 2 of 2

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

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | PLU BigSinks 11 Federal Battery | Turn Around | |
| Project Number: | 012918036 | Routine | ☒ |
| P.O. Number: | 2RP 3887 | Rush: | |
| Sampler's Name: | L. Lambach | Due Date: | 4/8/2019 |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | Yes (No) | Wet Ice: | (Yes) No | |
| Temperature (°C): | 0.5 \| 0.4 | Thermometer ID: | T8 | |
| Received Intact: | (Yes) No | | | |
| Cooler Custody Seals: | Yes ~~No~~ N/A | Correction Factor: | 0.1 | |
| Sample Custody Seals: | Yes ~~No~~ N/A | Total Containers: | | |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| FS04 | S | 03/29/2019 | 16:20 | 4' | 2 | X | X | X |
| FS05 | S | | 16:30 | 5' | 2 | | | |
| FS06 | S | | 16:35 | 5' | 2 | | | |
| FS07 | S | | 16:40 | 5' | 2 | | | |
| FS08 | S | | 16:45 | 5' | 2 | | | |
| FS09 | S | | 16:50 | 3' | 2 | | | |
| FS10 | S | | 16:55 | 3' | 2 | | | |
| FS11 | S | | 17:00 | 1' | 2 | | | |
| FS12 | S | | 17:10 | 1' | 2 | | | |
| FS13 | S | | 17:20 | 1' | 2 | | | |

**ANALYSIS REQUEST**

**Work Order Notes**

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

**Sample Comments**

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

*Circle Method(s) and Metal(s) to be analyzed* **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg



| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|
| 1 | | | 04/01/2019 12:17 | 2 | | 04/3 11:45 |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date 051418 Rev. 2018.1

Final 1.000

Page 54 of 55

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 04/03/2019 11:25:00 AM

**Work Order #:** 619853

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

**Temperature Measuring device used : R8**

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

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

Analyst: PH Device/Lot#:

**Checklist completed by:** Brianna Teel Date: 04/03/2019

Brianna Teel

**Checklist reviewed by:** Kalei Stout Date: 04/03/2019

Kalei Stout

# Analytical Report 644983

## for

## LT Environmental, Inc.

**Project Manager: Dan Moir**

**PLUBS11 Federal Battery**

**012918036**

**09-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)

09-DEC-19

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

Reference: XENCO Report No(s): **644983**
**PLUBS11 Federal Battery**
Project Address:

**Dan Moir**:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 644983. 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. 644983 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 644983

## LT Environmental, Inc., Arvada, CO

PLUBS11 Federal Battery

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| FS09A | S | 12-03-19 16:45 | 5 ft | 644983-001 |
| FS10A | S | 12-03-19 16:23 | 5 ft | 644983-002 |
| SW08 | S | 12-03-19 14:37 | 0 - 5 ft | 644983-003 |
| SW09 | S | 12-03-19 16:58 | 0 - 5 ft | 644983-004 |

**Sample receipt non conformances and comments:**

CORRECTED SAMPLE NAMES PER CLIENT EMAIL, SEE BELOW. NEW VERSION GENERATED. JK 12/09/19
FS09B --> FS09A
FS10B --> FS10A

**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 644983

## LT Environmental, Inc., Arvada, CO

## Project Name: PLUBS11 Federal Battery

**Project Id:** 012918036
**Contact:** Dan Moir
**Project Location:**

**Date Received in Lab:** Wed Dec-04-19 08:45 am
**Report Date:** 09-DEC-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 644983-001 | | 644983-002 | | 644983-003 | | 644983-004 | | | | | |
| | ***Field Id:*** | FS09A | | FS10A | | SW08 | | SW09 | | | | | |
| | ***Depth:*** | 5- ft | | 5- ft | | 0-5 ft | | 0-5 ft | | | | | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | | | | |
| | ***Sampled:*** | Dec-03-19 16:45 | | Dec-03-19 16:23 | | Dec-03-19 14:37 | | Dec-03-19 16:58 | | | | | |
| **Chloride by EPA 300** | ***Extracted:*** | Dec-04-19 13:00 | | Dec-04-19 13:00 | | Dec-04-19 13:00 | | Dec-04-19 13:00 | | | | | |
| | ***Analyzed:*** | Dec-04-19 16:51 | | Dec-04-19 16:57 | | Dec-04-19 17:03 | | Dec-04-19 17:20 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | | |
| Chloride | | <9.98 | 9.98 | <10.1 | 10.1 | <10.1 | 10.1 | <10.0 | 10.0 | | | | |





Jessica Kramer
Project Assistant

# Certificate of Analysis Summary 644983

## LT Environmental, Inc., Arvada, CO

## Project Name: PLUBS11 Federal Battery

**Project Id:** 012918036
**Contact:** Dan Moir
**Project Location:**

**Date Received in Lab:** Wed Dec-04-19 08:45 am
**Report Date:** 09-DEC-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 644983-001 | | 644983-002 | | 644983-003 | | 644983-004 | | | | | |
| | ***Field Id:*** | FS09A | | FS10A | | SW08 | | SW09 | | | | | |
| | ***Depth:*** | 5- ft | | 5- ft | | 0-5 ft | | 0-5 ft | | | | | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | | | | |
| | ***Sampled:*** | Dec-03-19 16:45 | | Dec-03-19 16:23 | | Dec-03-19 14:37 | | Dec-03-19 16:58 | | | | | |
| **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 | | | | | |
| | ***Analyzed:*** | Dec-04-19 18:50 | | Dec-04-19 19:07 | | Dec-04-19 19:24 | | Dec-04-19 19:42 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | | |
| Benzene | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | | | | |
| Toluene | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | | | | |
| Ethylbenzene | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | | | | |
| m,p-Xylenes | | <0.00400 | 0.00400 | <0.00403 | 0.00403 | <0.00401 | 0.00401 | <0.00397 | 0.00397 | | | | |
| o-Xylene | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | | | | |
| Total Xylenes | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | | | | |
| Total BTEX | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | | | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | Dec-04-19 13:30 | | Dec-04-19 13:30 | | Dec-04-19 13:30 | | Dec-04-19 13:30 | | | | | |
| | ***Analyzed:*** | Dec-04-19 15:57 | | Dec-04-19 16:16 | | Dec-04-19 16:36 | | Dec-04-19 16:36 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | | |
| Gasoline Range Hydrocarbons (GRO) | | <50.3 | 50.3 | <50.1 | 50.1 | <50.3 | 50.3 | <49.9 | 49.9 | | | | |
| Diesel Range Organics (DRO) | | 62.4 | 50.3 | 139 | 50.1 | <50.3 | 50.3 | 180 | 49.9 | | | | |
| Motor Oil Range Hydrocarbons (MRO) | | <50.3 | 50.3 | <50.1 | 50.1 | <50.3 | 50.3 | <49.9 | 49.9 | | | | |
| Total GRO-DRO | | 62.4 | 50.3 | 139 | 50.1 | <50.3 | 50.3 | 180 | 49.9 | | | | |
| Total TPH | | 62.4 | 50.3 | 139 | 50.1 | <50.3 | 50.3 | 180 | 49.9 | | | | |





Jessica Kramer
Project Assistant

# Certificate of Analytical Results 644983

## LT Environmental, Inc., Arvada, CO

PLUBS11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS09A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644983-001 | Date Collected: | 12.03.19 16.45 | Sample Depth: | 5 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 | <9.98 | 9.98 | mg/kg | 12.04.19 16.51 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 13.30 | Basis: | Wet Weight |
| Seq Number: | 3109453 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.3 | 50.3 | mg/kg | 12.04.19 15.57 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **62.4** | 50.3 | mg/kg | 12.04.19 15.57 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.3 | 50.3 | mg/kg | 12.04.19 15.57 | U | 1 |
| **Total GRO-DRO** | PHC628 | **62.4** | 50.3 | mg/kg | 12.04.19 15.57 | | 1 |
| **Total TPH** | PHC635 | **62.4** | 50.3 | mg/kg | 12.04.19 15.57 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 132 | % | 70-135 | 12.04.19 15.57 | |
| o-Terphenyl | 84-15-1 | 134 | % | 70-135 | 12.04.19 15.57 | |

# Certificate of Analytical Results 644983

## LT Environmental, Inc., Arvada, CO

PLUBS11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS09A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644983-001 | Date Collected: | 12.03.19 16.45 | Sample Depth: | 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 | <0.00200 | 0.00200 | mg/kg | 12.04.19 18.50 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.04.19 18.50 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.04.19 18.50 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00400 | 0.00400 | mg/kg | 12.04.19 18.50 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.04.19 18.50 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.04.19 18.50 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.04.19 18.50 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 104 | % | 70-130 | 12.04.19 18.50 | |
| 1,4-Difluorobenzene | 540-36-3 | 104 | % | 70-130 | 12.04.19 18.50 | |

# Certificate of Analytical Results 644983

## LT Environmental, Inc., Arvada, CO

PLUBS11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS10A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644983-002 | Date Collected: | 12.03.19 16.23 | Sample Depth: | 5 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 | <10.1 | 10.1 | mg/kg | 12.04.19 16.57 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 13.30 | Basis: | Wet Weight |
| Seq Number: | 3109453 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 12.04.19 16.16 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **139** | 50.1 | mg/kg | 12.04.19 16.16 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 12.04.19 16.16 | U | 1 |
| **Total GRO-DRO** | PHC628 | **139** | 50.1 | mg/kg | 12.04.19 16.16 | | 1 |
| **Total TPH** | PHC635 | **139** | 50.1 | mg/kg | 12.04.19 16.16 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 104 | % | 70-135 | 12.04.19 16.16 | |
| o-Terphenyl | 84-15-1 | 121 | % | 70-135 | 12.04.19 16.16 | |

# Certificate of Analytical Results 644983

## LT Environmental, Inc., Arvada, CO

PLUBS11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS10A** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644983-002 | Date Collected: | 12.03.19 16.23 | Sample Depth: | 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 | <0.00202 | 0.00202 | mg/kg | 12.04.19 19.07 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 12.04.19 19.07 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 12.04.19 19.07 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00403 | 0.00403 | mg/kg | 12.04.19 19.07 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 12.04.19 19.07 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 12.04.19 19.07 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 12.04.19 19.07 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 102 | % | 70-130 | 12.04.19 19.07 | |
| 1,4-Difluorobenzene | 540-36-3 | 101 | % | 70-130 | 12.04.19 19.07 | |

# Certificate of Analytical Results 644983

## LT Environmental, Inc., Arvada, CO

PLUBS11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW08** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644983-003 | Date Collected: | 12.03.19 14.37 | Sample Depth: | 0 - 5 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 | <10.1 | 10.1 | mg/kg | 12.04.19 17.03 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 13.30 | Basis: | Wet Weight |
| Seq Number: | 3109453 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.3 | 50.3 | mg/kg | 12.04.19 16.36 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.3 | 50.3 | mg/kg | 12.04.19 16.36 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.3 | 50.3 | mg/kg | 12.04.19 16.36 | U | 1 |
| Total GRO-DRO | PHC628 | <50.3 | 50.3 | mg/kg | 12.04.19 16.36 | U | 1 |
| Total TPH | PHC635 | <50.3 | 50.3 | mg/kg | 12.04.19 16.36 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 116 | % | 70-135 | 12.04.19 16.36 | |
| o-Terphenyl | 84-15-1 | 125 | % | 70-135 | 12.04.19 16.36 | |

# Certificate of Analytical Results 644983

## LT Environmental, Inc., Arvada, CO

PLUBS11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW08** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644983-003 | Date Collected: | 12.03.19 14.37 | Sample Depth: | 0 - 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 | <0.00200 | 0.00200 | mg/kg | 12.04.19 19.24 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.04.19 19.24 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.04.19 19.24 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 12.04.19 19.24 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.04.19 19.24 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.04.19 19.24 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.04.19 19.24 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 104 | % | 70-130 | 12.04.19 19.24 | |
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 12.04.19 19.24 | |

# Certificate of Analytical Results 644983

## LT Environmental, Inc., Arvada, CO

PLUBS11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW09** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644983-004 | Date Collected: | 12.03.19 16.58 | Sample Depth: | 0 - 5 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 | <10.0 | 10.0 | mg/kg | 12.04.19 17.20 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.04.19 13.30 | Basis: | Wet Weight |
| Seq Number: | 3109453 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.9 | 49.9 | mg/kg | 12.04.19 16.36 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **180** | 49.9 | mg/kg | 12.04.19 16.36 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.9 | 49.9 | mg/kg | 12.04.19 16.36 | U | 1 |
| **Total GRO-DRO** | PHC628 | **180** | 49.9 | mg/kg | 12.04.19 16.36 | | 1 |
| **Total TPH** | PHC635 | **180** | 49.9 | mg/kg | 12.04.19 16.36 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 105 | % | 70-135 | 12.04.19 16.36 | |
| o-Terphenyl | 84-15-1 | 121 | % | 70-135 | 12.04.19 16.36 | |

# Certificate of Analytical Results 644983

## LT Environmental, Inc., Arvada, CO

PLUBS11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW09** | Matrix: | Soil | Date Received: | 12.04.19 08.45 |
| Lab Sample Id: | 644983-004 | Date Collected: | 12.03.19 16.58 | Sample Depth: | 0 - 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 | <0.00198 | 0.00198 | mg/kg | 12.04.19 19.42 | U | 1 |
| Toluene | 108-88-3 | <0.00198 | 0.00198 | mg/kg | 12.04.19 19.42 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00198 | 0.00198 | mg/kg | 12.04.19 19.42 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00397 | 0.00397 | mg/kg | 12.04.19 19.42 | U | 1 |
| o-Xylene | 95-47-6 | <0.00198 | 0.00198 | mg/kg | 12.04.19 19.42 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00198 | 0.00198 | mg/kg | 12.04.19 19.42 | U | 1 |
| Total BTEX | | <0.00198 | 0.00198 | mg/kg | 12.04.19 19.42 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 99 | % | 70-130 | 12.04.19 19.42 | |
| 1,4-Difluorobenzene | 540-36-3 | 99 | % | 70-130 | 12.04.19 19.42 | |

# Flagging Criteria

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

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

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

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

**F** RPD exceeded lab control limits.

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

**U** Analyte was not detected.

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

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

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

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

** Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

**PQL** Practical Quantitation Limit **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 644983

## LT Environmental, Inc.

PLUBS11 Federal Battery

**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: 3109453 Matrix: Solid Date Prep: 12.04.19
MB Sample Id: 7691711-1-BLK LCS Sample Id: 7691711-1-BKS LCSD Sample Id: 7691711-1-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 | 940 | 94 | 70-135 | 3 | 35 | mg/kg | 12.04.19 15:37 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 1040 | 104 | 1140 | 114 | 70-135 | 9 | 35 | mg/kg | 12.04.19 15:37 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 97 | | 124 | | 130 | | 70-135 | % | 12.04.19 15:37 |
| o-Terphenyl | 108 | | 123 | | 128 | | 70-135 | % | 12.04.19 15:37 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3109453 Matrix: Solid Date Prep: 12.04.19
MB Sample Id: 7691711-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 12.04.19 15:17 | |

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 644983

## LT Environmental, Inc.

PLUBS11 Federal Battery

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3109453 Matrix: Soil Date Prep: 12.04.19
Parent Sample Id: 644983-001 MS Sample Id: 644983-001 S MSD Sample Id: 644983-001 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 | 902 | 90 | 916 | 91 | 70-135 | 2 | 35 | mg/kg | 12.04.19 15:57 | |
| Diesel Range Organics (DRO) | 62.4 | 1000 | 1090 | 103 | 1080 | 101 | 70-135 | 1 | 35 | mg/kg | 12.04.19 15:57 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 128 | | 126 | | 70-135 | % | 12.04.19 15:57 |
| o-Terphenyl | 132 | | 126 | | 70-135 | % | 12.04.19 15:57 |

**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

Work Order No: 644983

XENCO LABORATORIES

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

www.xenco.com Page 1 of 1

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

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | PLU BS 11 Federal Battery | Turn Around | |
| Project Number: | 012918036 | Routine ☐ | |
| P.O. Number: | | Rush: 24 hr | |
| Sampler's Name: | ~~Benjamin Belill~~ Luis Del Val | Due Date: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Temperature (°C): | 1.2 | Thermometer ID | |
| Received Intact: | (Yes) No | | NM007 |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | 4 |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| FS09 B | S | 12/3/2019 | 1645 | 5' | 1 | X | X | X |
| FS10 B | S | 12/3/2019 | 1623 | 5' | ↓ | ↓ | ↓ | ↓ |
| SW08 | ↓ | ↓ | 1437 | LD 0-5' | | | | |
| SW09 | ↓ | ↓ | 1658 | LD 0-5' | | | | |

ANALYSIS REQUEST

**Work Order Notes**

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

**Sample Comments**

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



| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|
| 1 | | | 12-4-2019 | 2 | | 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 #:** 644983

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

**Temperature Measuring device used : tnm 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 645171

## for

## LT Environmental, Inc.

**Project Manager: Dan Moir**

**PLU BS 11 Federal Battery**

**012918035**

**06-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)

06-DEC-19

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

Reference: XENCO Report No(s): **645171**
**PLU BS 11 Federal Battery**
Project Address:

**Dan Moir**:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 645171. 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. 645171 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 645171

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| FS14 | S | 12-04-19 16:10 | 5 ft | 645171-001 |
| FS15 | S | 12-04-19 16:40 | 5 ft | 645171-002 |
| FS16 | S | 12-04-19 16:50 | 5 ft | 645171-003 |
| SW10 | S | 12-04-19 15:46 | 0 - 5 ft | 645171-004 |
| SW11 | S | 12-04-19 17:10 | 0 - 5 ft | 645171-005 |

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3109607 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3109615 TPH by SW8015 Mod
Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 645167-003 SD.

# Certificate of Analysis Summary 645171

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU BS 11 Federal Battery

**Project Id:** 012918035
**Contact:** Dan Moir
**Project Location:**

**Date Received in Lab:** Thu Dec-05-19 08:20 am
**Report Date:** 06-DEC-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 645171-001 | | 645171-002 | | 645171-003 | | 645171-004 | | 645171-005 | |
| | ***Field Id:*** | FS14 | | FS15 | | FS16 | | SW10 | | SW11 | |
| | ***Depth:*** | 5- ft | | 5- ft | | 5- ft | | 0-5 ft | | 0-5 ft | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Dec-04-19 16:10 | | Dec-04-19 16:40 | | Dec-04-19 16:50 | | Dec-04-19 15:46 | | Dec-04-19 17:10 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Dec-05-19 11:18 | | Dec-05-19 11:18 | | Dec-05-19 11:18 | | Dec-05-19 11:18 | | Dec-05-19 11:18 | |
| | ***Analyzed:*** | Dec-05-19 15:56 | | Dec-05-19 16:14 | | Dec-05-19 17:23 | | Dec-05-19 17:41 | | Dec-05-19 15:39 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Benzene | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00198 | 0.00198 |
| Toluene | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00198 | 0.00198 |
| Ethylbenzene | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00198 | 0.00198 |
| m,p-Xylenes | | <0.00403 | 0.00403 | <0.00401 | 0.00401 | <0.00399 | 0.00399 | <0.00398 | 0.00398 | <0.00397 | 0.00397 |
| o-Xylene | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00198 | 0.00198 |
| Total Xylenes | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00198 | 0.00198 |
| Total BTEX | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00198 | 0.00198 |
| **Chloride by EPA 300** | ***Extracted:*** | Dec-05-19 10:32 | | Dec-05-19 10:32 | | Dec-05-19 10:32 | | Dec-05-19 10:32 | | Dec-05-19 10:32 | |
| | ***Analyzed:*** | Dec-05-19 17:18 | | Dec-05-19 17:25 | | Dec-05-19 17:44 | | Dec-05-19 17:50 | | Dec-05-19 17:56 | |
| | ***Units/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 | <10.0 | 10.0 | <9.98 | 9.98 | <10.0 | 10.0 |
| **TPH by SW8015 Mod** | ***Extracted:*** | Dec-05-19 15:00 | | Dec-05-19 15:00 | | Dec-05-19 15:00 | | Dec-05-19 15:00 | | Dec-05-19 15:00 | |
| | ***Analyzed:*** | Dec-05-19 18:09 | | Dec-05-19 18:09 | | Dec-05-19 18:29 | | Dec-05-19 18:29 | | Dec-05-19 18:48 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | <50.0 | 50.0 | <50.2 | 50.2 | <50.1 | 50.1 | <50.0 | 50.0 | <50.1 | 50.1 |
| Diesel Range Organics (DRO) | | 99.4 | 50.0 | 169 | 50.2 | 320 | 50.1 | <50.0 | 50.0 | 58.9 | 50.1 |
| Motor Oil Range Hydrocarbons (MRO) | | <50.0 | 50.0 | <50.2 | 50.2 | <50.1 | 50.1 | <50.0 | 50.0 | <50.1 | 50.1 |
| Total GRO-DRO | | 99.4 | 50.0 | 169 | 50.2 | 320 | 50.1 | <50.0 | 50.0 | 58.9 | 50.1 |
| Total TPH | | 99.4 | 50.0 | 169 | 50.2 | 320 | 50.1 | <50.0 | 50.0 | 58.9 | 50.1 |





Jessica Kramer
Project Assistant

# Certificate of Analytical Results 645171

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS14** | Matrix: | Soil | Date Received: | 12.05.19 08.20 |
| Lab Sample Id: | 645171-001 | Date Collected: | 12.04.19 16.10 | Sample Depth: | 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.05.19 10.32 | Basis: | Wet Weight |
| Seq Number: | 3109602 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <10.0 | 10.0 | mg/kg | 12.05.19 17.18 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3109615 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 12.05.19 18.09 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **99.4** | 50.0 | mg/kg | 12.05.19 18.09 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 12.05.19 18.09 | U | 1 |
| **Total GRO-DRO** | PHC628 | **99.4** | 50.0 | mg/kg | 12.05.19 18.09 | | 1 |
| **Total TPH** | PHC635 | **99.4** | 50.0 | mg/kg | 12.05.19 18.09 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 131 | % | 70-135 | 12.05.19 18.09 | |
| o-Terphenyl | 84-15-1 | 133 | % | 70-135 | 12.05.19 18.09 | |

# Certificate of Analytical Results 645171

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS14** | Matrix: | Soil | Date Received: | 12.05.19 08.20 |
| Lab Sample Id: | 645171-001 | Date Collected: | 12.04.19 16.10 | Sample Depth: | 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.05.19 11.18 | Basis: | Wet Weight |
| Seq Number: | 3109607 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 12.05.19 15.56 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 12.05.19 15.56 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 12.05.19 15.56 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00403 | 0.00403 | mg/kg | 12.05.19 15.56 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 12.05.19 15.56 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 12.05.19 15.56 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 12.05.19 15.56 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 99 | % | 70-130 | 12.05.19 15.56 | |
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 12.05.19 15.56 | |

# Certificate of Analytical Results 645171

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS15** | Matrix: | Soil | Date Received: | 12.05.19 08.20 |
| Lab Sample Id: | 645171-002 | Date Collected: | 12.04.19 16.40 | Sample Depth: | 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.05.19 10.32 | Basis: | Wet Weight |
| Seq Number: | 3109602 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <10.0 | 10.0 | mg/kg | 12.05.19 17.25 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3109615 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 12.05.19 18.09 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **169** | 50.2 | mg/kg | 12.05.19 18.09 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 12.05.19 18.09 | U | 1 |
| **Total GRO-DRO** | PHC628 | **169** | 50.2 | mg/kg | 12.05.19 18.09 | | 1 |
| **Total TPH** | PHC635 | **169** | 50.2 | mg/kg | 12.05.19 18.09 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 118 | % | 70-135 | 12.05.19 18.09 | |
| o-Terphenyl | 84-15-1 | 133 | % | 70-135 | 12.05.19 18.09 | |

# Certificate of Analytical Results 645171

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS15** | Matrix: | Soil | Date Received: | 12.05.19 08.20 |
| Lab Sample Id: | 645171-002 | Date Collected: | 12.04.19 16.40 | Sample Depth: | 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.05.19 11.18 | Basis: | Wet Weight |
| Seq Number: | 3109607 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.05.19 16.14 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.05.19 16.14 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.05.19 16.14 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 12.05.19 16.14 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.05.19 16.14 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.05.19 16.14 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.05.19 16.14 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 101 | % | 70-130 | 12.05.19 16.14 | |
| 4-Bromofluorobenzene | 460-00-4 | 102 | % | 70-130 | 12.05.19 16.14 | |

# Certificate of Analytical Results 645171

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS16** | Matrix: | Soil | Date Received: | 12.05.19 08.20 |
| Lab Sample Id: | 645171-003 | Date Collected: | 12.04.19 16.50 | Sample Depth: | 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.05.19 10.32 | Basis: | Wet Weight |
| Seq Number: | 3109602 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <10.0 | 10.0 | mg/kg | 12.05.19 17.44 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3109615 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 12.05.19 18.29 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **320** | 50.1 | mg/kg | 12.05.19 18.29 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 12.05.19 18.29 | U | 1 |
| **Total GRO-DRO** | PHC628 | **320** | 50.1 | mg/kg | 12.05.19 18.29 | | 1 |
| **Total TPH** | PHC635 | **320** | 50.1 | mg/kg | 12.05.19 18.29 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 115 | % | 70-135 | 12.05.19 18.29 | |
| o-Terphenyl | 84-15-1 | 128 | % | 70-135 | 12.05.19 18.29 | |

# Certificate of Analytical Results 645171

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS16** | Matrix: | Soil | Date Received: | 12.05.19 08.20 |
| Lab Sample Id: | 645171-003 | Date Collected: | 12.04.19 16.50 | Sample Depth: | 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.05.19 11.18 | Basis: | Wet Weight |
| Seq Number: | 3109607 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.05.19 17.23 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.05.19 17.23 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.05.19 17.23 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 12.05.19 17.23 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.05.19 17.23 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.05.19 17.23 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.05.19 17.23 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 96 | % | 70-130 | 12.05.19 17.23 | |
| 1,4-Difluorobenzene | 540-36-3 | 100 | % | 70-130 | 12.05.19 17.23 | |

# Certificate of Analytical Results 645171

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW10** | Matrix: | Soil | Date Received: | 12.05.19 08.20 |
| Lab Sample Id: | 645171-004 | Date Collected: | 12.04.19 15.46 | Sample Depth: | 0 - 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.05.19 10.32 | Basis: | Wet Weight |
| Seq Number: | 3109602 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.98 | 9.98 | mg/kg | 12.05.19 17.50 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3109615 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 12.05.19 18.29 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 12.05.19 18.29 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 12.05.19 18.29 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 12.05.19 18.29 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 12.05.19 18.29 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 109 | % | 70-135 | 12.05.19 18.29 | |
| o-Terphenyl | 84-15-1 | 129 | % | 70-135 | 12.05.19 18.29 | |

# Certificate of Analytical Results 645171

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW10** | Matrix: | Soil | Date Received: | 12.05.19 08.20 |
| Lab Sample Id: | 645171-004 | Date Collected: | 12.04.19 15.46 | Sample Depth: | 0 - 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.05.19 11.18 | Basis: | Wet Weight |
| Seq Number: | 3109607 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 12.05.19 17.41 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 12.05.19 17.41 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 12.05.19 17.41 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 12.05.19 17.41 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 12.05.19 17.41 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 12.05.19 17.41 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 12.05.19 17.41 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 100 | % | 70-130 | 12.05.19 17.41 | |
| 4-Bromofluorobenzene | 460-00-4 | 101 | % | 70-130 | 12.05.19 17.41 | |

# Certificate of Analytical Results 645171

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW11** | Matrix: | Soil | Date Received: | 12.05.19 08.20 |
| Lab Sample Id: | 645171-005 | Date Collected: | 12.04.19 17.10 | Sample Depth: | 0 - 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.05.19 10.32 | Basis: | Wet Weight |
| Seq Number: | 3109602 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <10.0 | 10.0 | mg/kg | 12.05.19 17.56 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.05.19 15.00 | Basis: | Wet Weight |
| Seq Number: | 3109615 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 12.05.19 18.48 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **58.9** | 50.1 | mg/kg | 12.05.19 18.48 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 12.05.19 18.48 | U | 1 |
| **Total GRO-DRO** | PHC628 | **58.9** | 50.1 | mg/kg | 12.05.19 18.48 | | 1 |
| **Total TPH** | PHC635 | **58.9** | 50.1 | mg/kg | 12.05.19 18.48 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 119 | % | 70-135 | 12.05.19 18.48 | |
| o-Terphenyl | 84-15-1 | 127 | % | 70-135 | 12.05.19 18.48 | |

# Certificate of Analytical Results 645171

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW11** | Matrix: | Soil | Date Received: | 12.05.19 08.20 |
| Lab Sample Id: | 645171-005 | Date Collected: | 12.04.19 17.10 | Sample Depth: | 0 - 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.05.19 11.18 | Basis: | Wet Weight |
| Seq Number: | 3109607 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00198 | 0.00198 | mg/kg | 12.05.19 15.39 | U | 1 |
| Toluene | 108-88-3 | <0.00198 | 0.00198 | mg/kg | 12.05.19 15.39 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00198 | 0.00198 | mg/kg | 12.05.19 15.39 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00397 | 0.00397 | mg/kg | 12.05.19 15.39 | U | 1 |
| o-Xylene | 95-47-6 | <0.00198 | 0.00198 | mg/kg | 12.05.19 15.39 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00198 | 0.00198 | mg/kg | 12.05.19 15.39 | U | 1 |
| Total BTEX | | <0.00198 | 0.00198 | mg/kg | 12.05.19 15.39 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 97 | % | 70-130 | 12.05.19 15.39 | |
| 1,4-Difluorobenzene | 540-36-3 | 101 | % | 70-130 | 12.05.19 15.39 | |

# 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 645171

## LT Environmental, Inc.

PLU BS 11 Federal Battery

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3109602 Matrix: Solid Date Prep: 12.05.19
MB Sample Id: 7691787-1-BLK LCS Sample Id: 7691787-1-BKS LCSD Sample Id: 7691787-1-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 | 264 | 106 | 264 | 106 | 90-110 | 0 | 20 | mg/kg | 12.05.19 16:35 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3109602 Matrix: Soil Date Prep: 12.05.19
Parent Sample Id: 645164-001 MS Sample Id: 645164-001 S MSD Sample Id: 645164-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 175 | 200 | 391 | 108 | 393 | 109 | 90-110 | 1 | 20 | mg/kg | 12.05.19 16:53 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3109615 Matrix: Solid Date Prep: 12.05.19
MB Sample Id: 7691802-1-BLK LCS Sample Id: 7691802-1-BKS LCSD Sample Id: 7691802-1-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 | 873 | 87 | 945 | 95 | 70-135 | 8 | 35 | mg/kg | 12.05.19 17:06 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 1070 | 107 | 1100 | 110 | 70-135 | 3 | 35 | mg/kg | 12.05.19 17:06 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 100 | | 124 | | 126 | | 70-135 | % | 12.05.19 17:06 |
| o-Terphenyl | 108 | | 129 | | 130 | | 70-135 | % | 12.05.19 17:06 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3109615 Matrix: Solid Date Prep: 12.05.19
MB Sample Id: 7691802-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 12.05.19 17:06 | |

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 645171

## LT Environmental, Inc.

PLU BS 11 Federal Battery

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3109615 Matrix: Soil Date Prep: 12.05.19
Parent Sample Id: 645167-003 MS Sample Id: 645167-003 S MSD Sample Id: 645167-003 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) | <50.1 | 1000 | 927 | 93 | 852 | 85 | 70-135 | 8 | 35 | mg/kg | 12.05.19 17:49 | |
| Diesel Range Organics (DRO) | <50.1 | 1000 | 1070 | 107 | 1100 | 110 | 70-135 | 3 | 35 | mg/kg | 12.05.19 17:49 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 133 | | 135 | | 70-135 | % | 12.05.19 17:49 |
| o-Terphenyl | 133 | | 139 | ** | 70-135 | % | 12.05.19 17:49 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3109607 Matrix: Solid Date Prep: 12.05.19
MB Sample Id: 7691785-1-BLK LCS Sample Id: 7691785-1-BKS LCSD Sample Id: 7691785-1-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 | 0.0971 | 97 | 0.0896 | 90 | 70-130 | 8 | 35 | mg/kg | 12.05.19 12:28 | |
| Toluene | <0.00200 | 0.100 | 0.0972 | 97 | 0.0895 | 90 | 70-130 | 8 | 35 | mg/kg | 12.05.19 12:28 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0962 | 96 | 0.0883 | 88 | 71-129 | 9 | 35 | mg/kg | 12.05.19 12:28 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.200 | 100 | 0.183 | 92 | 70-135 | 9 | 35 | mg/kg | 12.05.19 12:28 | |
| o-Xylene | <0.00200 | 0.100 | 0.0970 | 97 | 0.0900 | 90 | 71-133 | 7 | 35 | mg/kg | 12.05.19 12:28 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 102 | | 99 | | 98 | | 70-130 | % | 12.05.19 12:28 |
| 4-Bromofluorobenzene | 98 | | 97 | | 97 | | 70-130 | % | 12.05.19 12:28 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3109607 Matrix: Soil Date Prep: 12.05.19
Parent Sample Id: 645171-003 MS Sample Id: 645171-003 S MSD Sample Id: 645171-003 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | 0.0998 | 0.0900 | 90 | 0.0834 | 84 | 70-130 | 8 | 35 | mg/kg | 12.05.19 21:09 | |
| Toluene | <0.00200 | 0.0998 | 0.0850 | 85 | 0.0789 | 80 | 70-130 | 7 | 35 | mg/kg | 12.05.19 21:09 | |
| Ethylbenzene | <0.00200 | 0.0998 | 0.0767 | 77 | 0.0726 | 73 | 71-129 | 5 | 35 | mg/kg | 12.05.19 21:09 | |
| m,p-Xylenes | <0.00399 | 0.200 | 0.157 | 79 | 0.148 | 75 | 70-135 | 6 | 35 | mg/kg | 12.05.19 21:09 | |
| o-Xylene | <0.00200 | 0.0998 | 0.0772 | 77 | 0.0728 | 74 | 71-133 | 6 | 35 | mg/kg | 12.05.19 21:09 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 99 | | 100 | | 70-130 | % | 12.05.19 21:09 |
| 4-Bromofluorobenzene | 99 | | 100 | | 70-130 | % | 12.05.19 21:09 |

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

# Chain of Custody

Work Order No: 445171

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000) www.xenco.com Page 1 of 1

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

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | PLU BS 11 Federal Battery | Turn Around | |
| Project Number: | 012919036 | Routine ☐ | |
| P.O. Number: | | Rush: 24 hr | |
| Sampler's Name: | ~~Benjamin Belill~~ Luis Del Val | Due Date: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Temperature (°C): | 1.7 | Thermometer ID | |
| Received Intact: | (Yes) No | T-NM-007 | |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | 5 |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| FS14 | S | 12/4/2019 | 1610 | 5' | 1 | X | X | X |
| FS15 | | | 1640 | 5' | | | | |
| &FS16 | | | 1650 | 5' | | | | |
| SW1210 | | | 1546 | 0-5' | | | | |
| SW1311 | | | 1710 | 0-5' | | | | |

ANALYSIS REQUEST

**Work Order Notes**

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

**Sample Comments**

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



| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|
| 1 | Luis Del Val | | 12/5/19 0824 | | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date 051418 Rev. 2018.1

# Analytical Report 645361

## for

## LT Environmental, Inc.

**Project Manager: Dan Moir**

**PLU BS 11 Federal Battery**

**012918036**

**09-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)

09-DEC-19

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

Reference: XENCO Report No(s): **645361**
**PLU BS 11 Federal Battery**
Project Address:

**Dan Moir**:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 645361. 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. 645361 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 645361

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| FS17 | S | 12-05-19 11:25 | 5 ft | 645361-001 |
| FS18 | S | 12-05-19 11:56 | 5 ft | 645361-002 |
| FS19 | S | 12-05-19 12:10 | 5 ft | 645361-003 |
| FS20 | S | 12-05-19 16:50 | 5 ft | 645361-004 |
| SW12 | S | 12-05-19 15:50 | 0 - 5 ft | 645361-005 |
| SW13 | S | 12-05-19 16:17 | 0 - 5 ft | 645361-006 |

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3109696 BTEX by EPA 8021B

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

Batch: LBA-3109699 Chloride by EPA 300

Lab Sample ID 645363-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 645361-001, -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 645361

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU BS 11 Federal Battery

**Project Id:** 012918036
**Contact:** Dan Moir
**Project Location:**

**Date Received in Lab:** Fri Dec-06-19 08:30 am
**Report Date:** 09-DEC-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 645361-001 | | 645361-002 | | 645361-003 | | 645361-004 | | 645361-005 | | 645361-006 | |
| | ***Field Id:*** | FS17 | | FS18 | | FS19 | | FS20 | | SW12 | | SW13 | |
| | ***Depth:*** | 5- ft | | 5- ft | | 5- ft | | 5- ft | | 0-5 ft | | 0-5 ft | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Dec-05-19 11:25 | | Dec-05-19 11:56 | | Dec-05-19 12:10 | | Dec-05-19 16:50 | | Dec-05-19 15:50 | | Dec-05-19 16:17 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Dec-06-19 11:00 | | Dec-06-19 11:00 | | Dec-06-19 11:00 | | Dec-06-19 11:00 | | Dec-06-19 11:00 | | Dec-06-19 11:00 | |
| | ***Analyzed:*** | Dec-06-19 15:05 | | Dec-06-19 15:24 | | Dec-06-19 15:43 | | Dec-06-19 16:02 | | Dec-06-19 17:06 | | Dec-06-19 17:25 | |
| | ***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 | <0.00199 | 0.00199 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00201 | 0.00201 | <0.00202 | 0.00202 |
| Toluene | | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00201 | 0.00201 | <0.00202 | 0.00202 |
| Ethylbenzene | | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00201 | 0.00201 | <0.00202 | 0.00202 |
| m,p-Xylenes | | <0.00399 | 0.00399 | <0.00398 | 0.00398 | <0.00403 | 0.00403 | <0.00399 | 0.00399 | <0.00402 | 0.00402 | <0.00404 | 0.00404 |
| o-Xylene | | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00201 | 0.00201 | <0.00202 | 0.00202 |
| Total Xylenes | | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00201 | 0.00201 | <0.00202 | 0.00202 |
| Total BTEX | | <0.00200 | 0.00200 | <0.00199 | 0.00199 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00201 | 0.00201 | <0.00202 | 0.00202 |
| **Chloride by EPA 300** | ***Extracted:*** | Dec-06-19 11:00 | | Dec-06-19 11:00 | | Dec-06-19 11:00 | | Dec-06-19 11:00 | | Dec-06-19 11:00 | | Dec-06-19 11:00 | |
| | ***Analyzed:*** | Dec-06-19 12:42 | | Dec-06-19 12:59 | | Dec-06-19 13:05 | | Dec-06-19 13:11 | | Dec-06-19 13:17 | | Dec-06-19 13:34 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 11.6 | 10.0 | <9.98 | 9.98 | <9.92 | 9.92 | <10.1 | 10.1 | 42.4 | 10.1 | 82.4 | 9.88 |
| **TPH by SW8015 Mod** | ***Extracted:*** | Dec-06-19 13:00 | | Dec-06-19 13:00 | | Dec-06-19 13:00 | | Dec-06-19 15:50 | | Dec-06-19 15:50 | | Dec-06-19 15:50 | |
| | ***Analyzed:*** | Dec-06-19 17:46 | | Dec-06-19 17:46 | | Dec-06-19 18:05 | | Dec-07-19 01:27 | | Dec-07-19 01:47 | | Dec-07-19 02:07 | |
| | ***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 | <50.2 | 50.2 | <50.3 | 50.3 | <50.0 | 50.0 |
| Diesel Range Organics (DRO) | | 100 | 50.2 | 184 | 50.2 | <50.2 | 50.2 | <50.2 | 50.2 | <50.3 | 50.3 | <50.0 | 50.0 |
| Motor Oil Range Hydrocarbons (MRO) | | <50.2 | 50.2 | <50.2 | 50.2 | <50.2 | 50.2 | <50.2 | 50.2 | <50.3 | 50.3 | <50.0 | 50.0 |
| Total GRO-DRO | | 100 | 50.2 | 184 | 50.2 | <50.2 | 50.2 | <50.2 | 50.2 | <50.3 | 50.3 | <50.0 | 50.0 |
| Total TPH | | 100 | 50.2 | 184 | 50.2 | <50.2 | 50.2 | <50.2 | 50.2 | <50.3 | 50.3 | <50.0 | 50.0 |





Jessica Kramer
Project Assistant

# Certificate of Analytical Results 645361

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS17** | Matrix: | Soil | Date Received: | 12.06.19 08.30 |
| Lab Sample Id: | 645361-001 | Date Collected: | 12.05.19 11.25 | Sample Depth: | 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.06.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109699 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **11.6** | 10.0 | mg/kg | 12.07.19 13.11 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.06.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3109762 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 12.06.19 17.46 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **100** | 50.2 | mg/kg | 12.06.19 17.46 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 12.06.19 17.46 | U | 1 |
| **Total GRO-DRO** | PHC628 | **100** | 50.2 | mg/kg | 12.06.19 17.46 | | 1 |
| **Total TPH** | PHC635 | **100** | 50.2 | mg/kg | 12.06.19 17.46 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 88 | % | 70-135 | 12.06.19 17.46 | |
| o-Terphenyl | 84-15-1 | 92 | % | 70-135 | 12.06.19 17.46 | |

# Certificate of Analytical Results 645361

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS17** | Matrix: | Soil | Date Received: | 12.06.19 08.30 |
| Lab Sample Id: | 645361-001 | Date Collected: | 12.05.19 11.25 | Sample Depth: | 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.06.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109696 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.06.19 15.05 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.06.19 15.05 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.06.19 15.05 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 12.06.19 15.05 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.06.19 15.05 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.06.19 15.05 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.06.19 15.05 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 86 | % | 70-130 | 12.06.19 15.05 | |
| 4-Bromofluorobenzene | 460-00-4 | 100 | % | 70-130 | 12.06.19 15.05 | |

# Certificate of Analytical Results 645361

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS18** | Matrix: | Soil | Date Received: | 12.06.19 08.30 |
| Lab Sample Id: | 645361-002 | Date Collected: | 12.05.19 11.56 | Sample Depth: | 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.06.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109699 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.98 | 9.98 | mg/kg | 12.06.19 12.59 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.06.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3109762 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 12.06.19 17.46 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **184** | 50.2 | mg/kg | 12.06.19 17.46 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 12.06.19 17.46 | U | 1 |
| **Total GRO-DRO** | PHC628 | **184** | 50.2 | mg/kg | 12.06.19 17.46 | | 1 |
| **Total TPH** | PHC635 | **184** | 50.2 | mg/kg | 12.06.19 17.46 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 93 | % | 70-135 | 12.06.19 17.46 | |
| o-Terphenyl | 84-15-1 | 102 | % | 70-135 | 12.06.19 17.46 | |

# Certificate of Analytical Results 645361

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS18** | Matrix: | Soil | Date Received: | 12.06.19 08.30 |
| Lab Sample Id: | 645361-002 | Date Collected: | 12.05.19 11.56 | Sample Depth: | 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.06.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109696 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 12.06.19 15.24 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 12.06.19 15.24 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 12.06.19 15.24 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 12.06.19 15.24 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 12.06.19 15.24 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 12.06.19 15.24 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 12.06.19 15.24 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 118 | % | 70-130 | 12.06.19 15.24 | |
| 1,4-Difluorobenzene | 540-36-3 | 107 | % | 70-130 | 12.06.19 15.24 | |

# Certificate of Analytical Results 645361

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS19** | Matrix: | Soil | Date Received: | 12.06.19 08.30 |
| Lab Sample Id: | 645361-003 | Date Collected: | 12.05.19 12.10 | Sample Depth: | 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.06.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109699 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.92 | 9.92 | mg/kg | 12.06.19 13.05 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.06.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3109762 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 12.06.19 18.05 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.2 | 50.2 | mg/kg | 12.06.19 18.05 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 12.06.19 18.05 | U | 1 |
| Total GRO-DRO | PHC628 | <50.2 | 50.2 | mg/kg | 12.06.19 18.05 | U | 1 |
| Total TPH | PHC635 | <50.2 | 50.2 | mg/kg | 12.06.19 18.05 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 95 | % | 70-135 | 12.06.19 18.05 | |
| o-Terphenyl | 84-15-1 | 93 | % | 70-135 | 12.06.19 18.05 | |

# Certificate of Analytical Results 645361

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS19** | Matrix: | Soil | Date Received: | 12.06.19 08.30 |
| Lab Sample Id: | 645361-003 | Date Collected: | 12.05.19 12.10 | Sample Depth: | 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.06.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109696 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 12.06.19 15.43 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 12.06.19 15.43 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 12.06.19 15.43 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00403 | 0.00403 | mg/kg | 12.06.19 15.43 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 12.06.19 15.43 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 12.06.19 15.43 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 12.06.19 15.43 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 95 | % | 70-130 | 12.06.19 15.43 | |
| 4-Bromofluorobenzene | 460-00-4 | 111 | % | 70-130 | 12.06.19 15.43 | |

# Certificate of Analytical Results 645361

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS20** | Matrix: | Soil | Date Received: | 12.06.19 08.30 |
| Lab Sample Id: | 645361-004 | Date Collected: | 12.05.19 16.50 | Sample Depth: | 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.06.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109699 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <10.1 | 10.1 | mg/kg | 12.06.19 13.11 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.06.19 15.50 | Basis: | Wet Weight |
| Seq Number: | 3109776 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 12.07.19 01.27 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.2 | 50.2 | mg/kg | 12.07.19 01.27 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 12.07.19 01.27 | U | 1 |
| Total GRO-DRO | PHC628 | <50.2 | 50.2 | mg/kg | 12.07.19 01.27 | U | 1 |
| Total TPH | PHC635 | <50.2 | 50.2 | mg/kg | 12.07.19 01.27 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 94 | % | 70-135 | 12.07.19 01.27 | |
| o-Terphenyl | 84-15-1 | 89 | % | 70-135 | 12.07.19 01.27 | |

# Certificate of Analytical Results 645361

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS20** | Matrix: | Soil | Date Received: | 12.06.19 08.30 |
| Lab Sample Id: | 645361-004 | Date Collected: | 12.05.19 16.50 | Sample Depth: | 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.06.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109696 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.06.19 16.02 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.06.19 16.02 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.06.19 16.02 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 12.06.19 16.02 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.06.19 16.02 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.06.19 16.02 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.06.19 16.02 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 117 | % | 70-130 | 12.06.19 16.02 | |
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 12.06.19 16.02 | |

# Certificate of Analytical Results 645361

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW12** | Matrix: | Soil | Date Received: | 12.06.19 08.30 |
| Lab Sample Id: | 645361-005 | Date Collected: | 12.05.19 15.50 | Sample Depth: | 0 - 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.06.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109699 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **42.4** | 10.1 | mg/kg | 12.06.19 13.17 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.06.19 15.50 | Basis: | Wet Weight |
| Seq Number: | 3109776 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.3 | 50.3 | mg/kg | 12.07.19 01.47 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.3 | 50.3 | mg/kg | 12.07.19 01.47 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.3 | 50.3 | mg/kg | 12.07.19 01.47 | U | 1 |
| Total GRO-DRO | PHC628 | <50.3 | 50.3 | mg/kg | 12.07.19 01.47 | U | 1 |
| Total TPH | PHC635 | <50.3 | 50.3 | mg/kg | 12.07.19 01.47 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 88 | % | 70-135 | 12.07.19 01.47 | |
| o-Terphenyl | 84-15-1 | 92 | % | 70-135 | 12.07.19 01.47 | |

# Certificate of Analytical Results 645361

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW12** | Matrix: | Soil | Date Received: | 12.06.19 08.30 |
| Lab Sample Id: | 645361-005 | Date Collected: | 12.05.19 15.50 | Sample Depth: | 0 - 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.06.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109696 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 12.06.19 17.06 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 12.06.19 17.06 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 12.06.19 17.06 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 12.06.19 17.06 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 12.06.19 17.06 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 12.06.19 17.06 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 12.06.19 17.06 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 108 | % | 70-130 | 12.06.19 17.06 | |
| 1,4-Difluorobenzene | 540-36-3 | 85 | % | 70-130 | 12.06.19 17.06 | |

# Certificate of Analytical Results 645361

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW13** | Matrix: | Soil | Date Received: | 12.06.19 08.30 |
| Lab Sample Id: | 645361-006 | Date Collected: | 12.05.19 16.17 | Sample Depth: | 0 - 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.06.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109699 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **82.4** | 9.88 | mg/kg | 12.06.19 13.34 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.06.19 15.50 | Basis: | Wet Weight |
| Seq Number: | 3109776 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 12.07.19 02.07 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 12.07.19 02.07 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 12.07.19 02.07 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 12.07.19 02.07 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 12.07.19 02.07 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 80 | % | 70-135 | 12.07.19 02.07 | |
| o-Terphenyl | 84-15-1 | 85 | % | 70-135 | 12.07.19 02.07 | |

# Certificate of Analytical Results 645361

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW13** | Matrix: | Soil | Date Received: | 12.06.19 08.30 |
| Lab Sample Id: | 645361-006 | Date Collected: | 12.05.19 16.17 | Sample Depth: | 0 - 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.06.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3109696 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 12.06.19 17.25 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 12.06.19 17.25 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 12.06.19 17.25 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00404 | 0.00404 | mg/kg | 12.06.19 17.25 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 12.06.19 17.25 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 12.06.19 17.25 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 12.06.19 17.25 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 120 | % | 70-130 | 12.06.19 17.25 | |
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 12.06.19 17.25 | |

# 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 645361

## LT Environmental, Inc.

PLU BS 11 Federal Battery

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3109699 Matrix: Solid Date Prep: 12.06.19
MB Sample Id: 7691886-1-BLK LCS Sample Id: 7691886-1-BKS LCSD Sample Id: 7691886-1-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 | 263 | 105 | 265 | 106 | 90-110 | 1 | 20 | mg/kg | 12.06.19 12:36 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3109699 Matrix: Soil Date Prep: 12.06.19
Parent Sample Id: 645361-001 MS Sample Id: 645361-001 S MSD Sample Id: 645361-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 11.6 | 201 | 185 | 86 | 184 | 86 | 90-110 | 1 | 20 | mg/kg | 12.06.19 12:48 | X |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3109699 Matrix: Soil Date Prep: 12.06.19
Parent Sample Id: 645363-011 MS Sample Id: 645363-011 S MSD Sample Id: 645363-011 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <9.98 | 250 | 291 | 116 | 293 | 118 | 90-110 | 1 | 20 | mg/kg | 12.06.19 14:09 | X |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3109762 Matrix: Solid Date Prep: 12.06.19
MB Sample Id: 7691873-1-BLK LCS Sample Id: 7691873-1-BKS LCSD Sample Id: 7691873-1-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 | 882 | 88 | 835 | 84 | 70-135 | 5 | 35 | mg/kg | 12.06.19 16:06 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 1060 | 106 | 1030 | 103 | 70-135 | 3 | 35 | mg/kg | 12.06.19 16:06 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 127 | | 134 | | 132 | | 70-135 | % | 12.06.19 16:06 |
| o-Terphenyl | 134 | | 124 | | 128 | | 70-135 | % | 12.06.19 16:06 |

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 645361

## LT Environmental, Inc.

PLU BS 11 Federal Battery

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3109776 Matrix: Solid Date Prep: 12.06.19
MB Sample Id: 7691883-1-BLK LCS Sample Id: 7691883-1-BKS LCSD Sample Id: 7691883-1-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 | 913 | 91 | 879 | 88 | 70-135 | 4 | 35 | mg/kg | 12.07.19 01:07 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 1110 | 111 | 1120 | 112 | 70-135 | 1 | 35 | mg/kg | 12.07.19 01:07 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 128 | | 123 | | 108 | | 70-135 | % | 12.07.19 01:07 |
| o-Terphenyl | 135 | | 123 | | 135 | | 70-135 | % | 12.07.19 01:07 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3109762 Matrix: Solid Date Prep: 12.06.19
MB Sample Id: 7691873-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 12.06.19 15:46 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3109776 Matrix: Solid Date Prep: 12.06.19
MB Sample Id: 7691883-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 12.07.19 00:47 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3109762 Matrix: Soil Date Prep: 12.06.19
Parent Sample Id: 645345-001 MS Sample Id: 645345-001 S MSD Sample Id: 645345-001 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) | <49.9 | 998 | 834 | 84 | 1040 | 104 | 70-135 | 22 | 35 | mg/kg | 12.06.19 16:26 | |
| Diesel Range Organics (DRO) | <49.9 | 998 | 1020 | 102 | 1240 | 124 | 70-135 | 19 | 35 | mg/kg | 12.06.19 16:26 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 108 | | 130 | | 70-135 | % | 12.06.19 16:26 |
| o-Terphenyl | 107 | | 122 | | 70-135 | % | 12.06.19 16:26 |

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 645361

## LT Environmental, Inc.

PLU BS 11 Federal Battery

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3109776 Matrix: Soil Date Prep: 12.06.19
Parent Sample Id: 645361-004 MS Sample Id: 645361-004 S MSD Sample Id: 645361-004 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 | 961 | 95 | 1000 | 101 | 70-135 | 4 | 35 | mg/kg | 12.07.19 01:27 | |
| Diesel Range Organics (DRO) | <50.3 | 1010 | 1180 | 117 | 1170 | 118 | 70-135 | 1 | 35 | mg/kg | 12.07.19 01:27 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 123 | | 131 | | 70-135 | % | 12.07.19 01:27 |
| o-Terphenyl | 123 | | 120 | | 70-135 | % | 12.07.19 01:27 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3109696 Matrix: Solid Date Prep: 12.06.19
MB Sample Id: 7691892-1-BLK LCS Sample Id: 7691892-1-BKS LCSD Sample Id: 7691892-1-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 | 0.0980 | 98 | 0.0912 | 91 | 70-130 | 7 | 35 | mg/kg | 12.06.19 11:29 | |
| Toluene | <0.00200 | 0.100 | 0.0989 | 99 | 0.0940 | 94 | 70-130 | 5 | 35 | mg/kg | 12.06.19 11:29 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0984 | 98 | 0.0939 | 94 | 71-129 | 5 | 35 | mg/kg | 12.06.19 11:29 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.207 | 104 | 0.199 | 100 | 70-135 | 4 | 35 | mg/kg | 12.06.19 11:29 | |
| o-Xylene | <0.00200 | 0.100 | 0.104 | 104 | 0.0997 | 100 | 71-133 | 4 | 35 | mg/kg | 12.06.19 11:29 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 102 | | 103 | | 101 | | 70-130 | % | 12.06.19 11:29 |
| 4-Bromofluorobenzene | 105 | | 114 | | 117 | | 70-130 | % | 12.06.19 11:29 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3109696 Matrix: Soil Date Prep: 12.06.19
Parent Sample Id: 645345-001 MS Sample Id: 645345-001 S MSD Sample Id: 645345-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | 0.100 | 0.104 | 104 | 0.0986 | 99 | 70-130 | 5 | 35 | mg/kg | 12.06.19 12:07 | |
| Toluene | <0.00201 | 0.100 | 0.106 | 106 | 0.0994 | 100 | 70-130 | 6 | 35 | mg/kg | 12.06.19 12:07 | |
| Ethylbenzene | <0.00201 | 0.100 | 0.104 | 104 | 0.0978 | 98 | 71-129 | 6 | 35 | mg/kg | 12.06.19 12:07 | |
| m,p-Xylenes | <0.00402 | 0.201 | 0.221 | 110 | 0.206 | 104 | 70-135 | 7 | 35 | mg/kg | 12.06.19 12:07 | |
| o-Xylene | <0.00201 | 0.100 | 0.112 | 112 | 0.104 | 104 | 71-133 | 7 | 35 | mg/kg | 12.06.19 12:07 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 104 | | 103 | | 70-130 | % | 12.06.19 12:07 |
| 4-Bromofluorobenzene | 120 | | 117 | | 70-130 | % | 12.06.19 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

# Chain of Custody

Work Order No: 645361

XENCO LABORATORIES

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

www.xenco.com Page 1 of 1

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

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | PLU BS 11 Federal Battery | Turn Around | |
| Project Number: | 01241936 | Routine | ☐ |
| P.O. Number: | | Rush: | 24hr |
| Sampler's Name: | ~~Benjamin Belill~~ Luis Del Val | Due Date: | |

| SAMPLE RECEIPT | | | | | |
|---|---|---|---|---|---|
| Temp Blank: | Yes (No) | Wet Ice: | (Yes) No | | |
| Temperature (°C): | 2.5 | Thermometer ID | | | |
| Received Intact: | (Yes) No | T-NM-007 | | | |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 | | |
| Sample Custody Seals: | Yes No (N/A) | Total Containers: | 6 | | |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| FS17 | S | 12/5/2019 | 1125 | 5' | 1 | X | X | X |
| FS18 | | | 1156 | 5' | | | | |
| FS19 | | | 1210 | 5' | | | | |
| FS20 | | | 1650 | 5' | | | | |
| SW12 | | | 1550 | 0-5' | | | | |
| SW13 | | | 1617 | 0-5' | | | | |

**ANALYSIS REQUEST**

**Work Order Notes**

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

**Sample Comments**

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

*Circle Method(s) and Metal(s) to be analyzed* **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg



| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|---|
| 1 | Luis Del Val | Rachel Mapp | 12/06/19 @0820 | 2 | Rachel Mapp | | 12/6/19 08:30 |
| 3 | | | | 4 | | | |
| 5 | | | | 6 | | | |

Revised Date 051418 Rev. 2018.1

# Analytical Report 645537

## for

## LT Environmental, Inc.

**Project Manager: Dan Moir**

**PLU BS 11 Federal Batterry**

**012918036**

**10-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)

10-DEC-19

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

Reference: XENCO Report No(s): **645537**
**PLU BS 11 Federal Batterry**
Project Address:

**Dan Moir**:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 645537. 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. 645537 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 645537

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Batterry

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| PH01 | S | 12-06-19 12:45 | 6 ft | 645537-001 |
| PH01A | S | 12-06-19 13:25 | 8 ft | 645537-002 |
| PH01B | S | 12-06-19 15:27 | 3 ft | 645537-003 |
| PH02 | S | 12-06-19 14:48 | 2 ft | 645537-004 |
| PH02A | S | 12-06-19 14:50 | 4 ft | 645537-005 |
| PH02B | S | 12-06-19 15:05 | 8 ft | 645537-006 |

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3109891 BTEX by EPA 8021B

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

# Certificate of Analysis Summary 645537

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU BS 11 Federal Batterry

**Project Id:** 012918036
**Contact:** Dan Moir
**Project Location:**

**Date Received in Lab:** Mon Dec-09-19 10:15 am
**Report Date:** 10-DEC-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 645537-001 | | 645537-002 | | 645537-003 | | 645537-004 | | 645537-005 | | 645537-006 | |
| | ***Field Id:*** | PH01 | | PH01A | | PH01B | | PH02 | | PH02A | | PH02B | |
| | ***Depth:*** | 6- ft | | 8- ft | | 3- ft | | 2- ft | | 4- ft | | 8- ft | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Dec-06-19 12:45 | | Dec-06-19 13:25 | | Dec-06-19 15:27 | | Dec-06-19 14:48 | | Dec-06-19 14:50 | | Dec-06-19 15:05 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | ** ** ** ** | | ** ** ** ** | | ** ** ** ** | | ** ** ** ** | | ** ** ** ** | | ** ** ** ** | |
| | ***Analyzed:*** | Dec-09-19 17:42 | | Dec-09-19 18:01 | | Dec-09-19 18:20 | | Dec-09-19 18:39 | | Dec-09-19 18:58 | | Dec-09-19 19:18 | |
| | ***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 | <0.00198 | 0.00198 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00198 | 0.00198 |
| Toluene | | <0.00199 | 0.00199 | <0.00198 | 0.00198 | <0.00198 | 0.00198 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00198 | 0.00198 |
| Ethylbenzene | | <0.00199 | 0.00199 | <0.00198 | 0.00198 | <0.00198 | 0.00198 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00198 | 0.00198 |
| m,p-Xylenes | | <0.00398 | 0.00398 | <0.00397 | 0.00397 | <0.00397 | 0.00397 | <0.00396 | 0.00396 | <0.00400 | 0.00400 | <0.00396 | 0.00396 |
| o-Xylene | | <0.00199 | 0.00199 | <0.00198 | 0.00198 | <0.00198 | 0.00198 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00198 | 0.00198 |
| Total Xylenes | | <0.00199 | 0.00199 | <0.00198 | 0.00198 | <0.00198 | 0.00198 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00198 | 0.00198 |
| Total BTEX | | <0.00199 | 0.00199 | <0.00198 | 0.00198 | <0.00198 | 0.00198 | <0.00198 | 0.00198 | <0.00200 | 0.00200 | <0.00198 | 0.00198 |
| **Chloride by EPA 300** | ***Extracted:*** | Dec-09-19 16:10 | | Dec-09-19 16:10 | | Dec-09-19 16:10 | | Dec-09-19 16:10 | | Dec-09-19 16:10 | | Dec-09-19 16:10 | |
| | ***Analyzed:*** | Dec-09-19 19:20 | | Dec-09-19 19:26 | | Dec-09-19 19:32 | | Dec-09-19 19:49 | | Dec-09-19 19:55 | | Dec-09-19 20:01 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 71.3 | 9.88 | 304 | 10.0 | 110 | 9.98 | 157 | 9.96 | 303 | 9.98 | 397 | 9.88 |
| **TPH by SW8015 Mod** | ***Extracted:*** | Dec-09-19 15:30 | | Dec-09-19 15:30 | | Dec-09-19 15:30 | | Dec-09-19 15:30 | | Dec-09-19 15:30 | | Dec-09-19 15:30 | |
| | ***Analyzed:*** | Dec-09-19 21:30 | | Dec-09-19 21:50 | | Dec-09-19 21:50 | | Dec-09-19 22:11 | | Dec-09-19 22:31 | | Dec-09-19 22:31 | |
| | ***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 | <50.0 | 50.0 | <49.9 | 49.9 | <50.0 | 50.0 | <50.1 | 50.1 | <50.3 | 50.3 |
| Diesel Range Organics (DRO) | | <50.2 | 50.2 | <50.0 | 50.0 | <49.9 | 49.9 | <50.0 | 50.0 | <50.1 | 50.1 | <50.3 | 50.3 |
| Motor Oil Range Hydrocarbons (MRO) | | <50.2 | 50.2 | <50.0 | 50.0 | <49.9 | 49.9 | <50.0 | 50.0 | <50.1 | 50.1 | <50.3 | 50.3 |
| Total GRO-DRO | | <50.2 | 50.2 | <50.0 | 50.0 | <49.9 | 49.9 | <50.0 | 50.0 | <50.1 | 50.1 | <50.3 | 50.3 |
| Total TPH | | <50.2 | 50.2 | <50.0 | 50.0 | <49.9 | 49.9 | <50.0 | 50.0 | <50.1 | 50.1 | <50.3 | 50.3 |





Jessica Kramer
Project Assistant

# Certificate of Analytical Results 645537

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Batterry

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH01** | Matrix: | Soil | Date Received: | 12.09.19 10.15 |
| Lab Sample Id: | 645537-001 | Date Collected: | 12.06.19 12.45 | Sample Depth: | 6 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.09.19 16.10 | Basis: | Wet Weight |
| Seq Number: | 3109906 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **71.3** | 9.88 | mg/kg | 12.09.19 19.20 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.09.19 15.30 | Basis: | Wet Weight |
| Seq Number: | 3109933 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 12.09.19 21.30 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.2 | 50.2 | mg/kg | 12.09.19 21.30 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 12.09.19 21.30 | U | 1 |
| Total GRO-DRO | PHC628 | <50.2 | 50.2 | mg/kg | 12.09.19 21.30 | U | 1 |
| Total TPH | PHC635 | <50.2 | 50.2 | mg/kg | 12.09.19 21.30 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 101 | % | 70-135 | 12.09.19 21.30 | |
| o-Terphenyl | 84-15-1 | 110 | % | 70-135 | 12.09.19 21.30 | |

# Certificate of Analytical Results 645537

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Batterry

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH01** | Matrix: | Soil | Date Received: | 12.09.19 10.15 |
| Lab Sample Id: | 645537-001 | Date Collected: | 12.06.19 12.45 | Sample Depth: | 6 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.09.19 08.50 | Basis: | Wet Weight |
| Seq Number: | 3109891 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 12.09.19 17.42 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 12.09.19 17.42 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 12.09.19 17.42 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 12.09.19 17.42 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 12.09.19 17.42 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 12.09.19 17.42 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 12.09.19 17.42 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 109 | % | 70-130 | 12.09.19 17.42 | |
| 1,4-Difluorobenzene | 540-36-3 | 97 | % | 70-130 | 12.09.19 17.42 | |

# Certificate of Analytical Results 645537

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Batterry

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH01A** | Matrix: | Soil | Date Received: | 12.09.19 10.15 |
| Lab Sample Id: | 645537-002 | Date Collected: | 12.06.19 13.25 | Sample Depth: | 8 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.09.19 16.10 | Basis: | Wet Weight |
| Seq Number: | 3109906 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **304** | 10.0 | mg/kg | 12.09.19 19.26 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.09.19 15.30 | Basis: | Wet Weight |
| Seq Number: | 3109933 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 12.09.19 21.50 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 12.09.19 21.50 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 12.09.19 21.50 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 12.09.19 21.50 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 12.09.19 21.50 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 101 | % | 70-135 | 12.09.19 21.50 | |
| o-Terphenyl | 84-15-1 | 104 | % | 70-135 | 12.09.19 21.50 | |

# Certificate of Analytical Results 645537

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Batterry

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH01A** | Matrix: | Soil | Date Received: | 12.09.19 10.15 |
| Lab Sample Id: | 645537-002 | Date Collected: | 12.06.19 13.25 | Sample Depth: | 8 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.09.19 08.50 | Basis: | Wet Weight |
| Seq Number: | 3109891 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.01 | U | 1 |
| Toluene | 108-88-3 | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.01 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.01 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00397 | 0.00397 | mg/kg | 12.09.19 18.01 | U | 1 |
| o-Xylene | 95-47-6 | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.01 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.01 | U | 1 |
| Total BTEX | | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.01 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 119 | % | 70-130 | 12.09.19 18.01 | |
| 1,4-Difluorobenzene | 540-36-3 | 105 | % | 70-130 | 12.09.19 18.01 | |

# Certificate of Analytical Results 645537

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Batterry

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH01B** | Matrix: | Soil | Date Received: | 12.09.19 10.15 |
| Lab Sample Id: | 645537-003 | Date Collected: | 12.06.19 15.27 | Sample Depth: | 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.09.19 16.10 | Basis: | Wet Weight |
| Seq Number: | 3109906 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **110** | 9.98 | mg/kg | 12.09.19 19.32 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.09.19 15.30 | Basis: | Wet Weight |
| Seq Number: | 3109933 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.9 | 49.9 | mg/kg | 12.09.19 21.50 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.9 | 49.9 | mg/kg | 12.09.19 21.50 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.9 | 49.9 | mg/kg | 12.09.19 21.50 | U | 1 |
| Total GRO-DRO | PHC628 | <49.9 | 49.9 | mg/kg | 12.09.19 21.50 | U | 1 |
| Total TPH | PHC635 | <49.9 | 49.9 | mg/kg | 12.09.19 21.50 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 99 | % | 70-135 | 12.09.19 21.50 | |
| o-Terphenyl | 84-15-1 | 107 | % | 70-135 | 12.09.19 21.50 | |

# Certificate of Analytical Results 645537

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Batterry

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH01B** | Matrix: | Soil | Date Received: | 12.09.19 10.15 |
| Lab Sample Id: | 645537-003 | Date Collected: | 12.06.19 15.27 | Sample Depth: | 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.09.19 08.50 | Basis: | Wet Weight |
| Seq Number: | 3109891 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.20 | U | 1 |
| Toluene | 108-88-3 | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.20 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.20 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00397 | 0.00397 | mg/kg | 12.09.19 18.20 | U | 1 |
| o-Xylene | 95-47-6 | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.20 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.20 | U | 1 |
| Total BTEX | | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.20 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 12.09.19 18.20 | |
| 4-Bromofluorobenzene | 460-00-4 | 119 | % | 70-130 | 12.09.19 18.20 | |

# Certificate of Analytical Results 645537

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Batterry

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH02** | Matrix: | Soil | Date Received: | 12.09.19 10.15 |
| Lab Sample Id: | 645537-004 | Date Collected: | 12.06.19 14.48 | Sample Depth: | 2 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.09.19 16.10 | Basis: | Wet Weight |
| Seq Number: | 3109906 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **157** | 9.96 | mg/kg | 12.09.19 19.49 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.09.19 15.30 | Basis: | Wet Weight |
| Seq Number: | 3109933 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 12.09.19 22.11 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 12.09.19 22.11 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 12.09.19 22.11 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 12.09.19 22.11 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 12.09.19 22.11 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 100 | % | 70-135 | 12.09.19 22.11 | |
| o-Terphenyl | 84-15-1 | 101 | % | 70-135 | 12.09.19 22.11 | |

# Certificate of Analytical Results 645537

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Batterry

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH02** | Matrix: | Soil | Date Received: | 12.09.19 10.15 |
| Lab Sample Id: | 645537-004 | Date Collected: | 12.06.19 14.48 | Sample Depth: | 2 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.09.19 08.50 | Basis: | Wet Weight |
| Seq Number: | 3109891 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.39 | U | 1 |
| Toluene | 108-88-3 | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.39 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.39 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00396 | 0.00396 | mg/kg | 12.09.19 18.39 | U | 1 |
| o-Xylene | 95-47-6 | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.39 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.39 | U | 1 |
| Total BTEX | | <0.00198 | 0.00198 | mg/kg | 12.09.19 18.39 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 104 | % | 70-130 | 12.09.19 18.39 | |
| 4-Bromofluorobenzene | 460-00-4 | 122 | % | 70-130 | 12.09.19 18.39 | |

# Certificate of Analytical Results 645537

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Batterry

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH02A** | Matrix: | Soil | Date Received: | 12.09.19 10.15 |
| Lab Sample Id: | 645537-005 | Date Collected: | 12.06.19 14.50 | Sample Depth: | 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.09.19 16.10 | Basis: | Wet Weight |
| Seq Number: | 3109906 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **303** | 9.98 | mg/kg | 12.09.19 19.55 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.09.19 15.30 | Basis: | Wet Weight |
| Seq Number: | 3109933 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 12.09.19 22.31 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 12.09.19 22.31 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 12.09.19 22.31 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 12.09.19 22.31 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 12.09.19 22.31 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 103 | % | 70-135 | 12.09.19 22.31 | |
| o-Terphenyl | 84-15-1 | 104 | % | 70-135 | 12.09.19 22.31 | |

# Certificate of Analytical Results 645537

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Batterry

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH02A** | Matrix: | Soil | Date Received: | 12.09.19 10.15 |
| Lab Sample Id: | 645537-005 | Date Collected: | 12.06.19 14.50 | Sample Depth: | 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.09.19 08.50 | Basis: | Wet Weight |
| Seq Number: | 3109891 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.09.19 18.58 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.09.19 18.58 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.09.19 18.58 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00400 | 0.00400 | mg/kg | 12.09.19 18.58 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.09.19 18.58 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.09.19 18.58 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.09.19 18.58 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 101 | % | 70-130 | 12.09.19 18.58 | |
| 4-Bromofluorobenzene | 460-00-4 | 115 | % | 70-130 | 12.09.19 18.58 | |

# Certificate of Analytical Results 645537

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Batterry

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH02B** | Matrix: | Soil | Date Received: | 12.09.19 10.15 |
| Lab Sample Id: | 645537-006 | Date Collected: | 12.06.19 15.05 | Sample Depth: | 8 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.09.19 16.10 | Basis: | Wet Weight |
| Seq Number: | 3109906 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **397** | 9.88 | mg/kg | 12.09.19 20.01 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.09.19 15.30 | Basis: | Wet Weight |
| Seq Number: | 3109933 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.3 | 50.3 | mg/kg | 12.09.19 22.31 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.3 | 50.3 | mg/kg | 12.09.19 22.31 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.3 | 50.3 | mg/kg | 12.09.19 22.31 | U | 1 |
| Total GRO-DRO | PHC628 | <50.3 | 50.3 | mg/kg | 12.09.19 22.31 | U | 1 |
| Total TPH | PHC635 | <50.3 | 50.3 | mg/kg | 12.09.19 22.31 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 98 | % | 70-135 | 12.09.19 22.31 | |
| o-Terphenyl | 84-15-1 | 106 | % | 70-135 | 12.09.19 22.31 | |

# Certificate of Analytical Results 645537

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Batterry

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH02B** | Matrix: | Soil | Date Received: | 12.09.19 10.15 |
| Lab Sample Id: | 645537-006 | Date Collected: | 12.06.19 15.05 | Sample Depth: | 8 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.09.19 08.50 | Basis: | Wet Weight |
| Seq Number: | 3109891 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00198 | 0.00198 | mg/kg | 12.09.19 19.18 | U | 1 |
| Toluene | 108-88-3 | <0.00198 | 0.00198 | mg/kg | 12.09.19 19.18 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00198 | 0.00198 | mg/kg | 12.09.19 19.18 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00396 | 0.00396 | mg/kg | 12.09.19 19.18 | U | 1 |
| o-Xylene | 95-47-6 | <0.00198 | 0.00198 | mg/kg | 12.09.19 19.18 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00198 | 0.00198 | mg/kg | 12.09.19 19.18 | U | 1 |
| Total BTEX | | <0.00198 | 0.00198 | mg/kg | 12.09.19 19.18 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 12.09.19 19.18 | |
| 4-Bromofluorobenzene | 460-00-4 | 121 | % | 70-130 | 12.09.19 19.18 | |

# 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 645537

## LT Environmental, Inc.

PLU BS 11 Federal Batterry

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3109906 Matrix: Solid Date Prep: 12.09.19
MB Sample Id: 7692026-1-BLK LCS Sample Id: 7692026-1-BKS LCSD Sample Id: 7692026-1-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 | 260 | 104 | 263 | 105 | 90-110 | 1 | 20 | mg/kg | 12.09.19 18:00 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3109906 Matrix: Soil Date Prep: 12.09.19
Parent Sample Id: 645522-001 MS Sample Id: 645522-001 S MSD Sample Id: 645522-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 6.14 | 199 | 210 | 102 | 209 | 102 | 90-110 | 0 | 20 | mg/kg | 12.09.19 18:17 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3109906 Matrix: Soil Date Prep: 12.09.19
Parent Sample Id: 645537-003 MS Sample Id: 645537-003 S MSD Sample Id: 645537-003 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 110 | 199 | 327 | 109 | 328 | 110 | 90-110 | 0 | 20 | mg/kg | 12.09.19 19:38 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3109933 Matrix: Solid Date Prep: 12.09.19
MB Sample Id: 7692045-1-BLK LCS Sample Id: 7692045-1-BKS LCSD Sample Id: 7692045-1-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 | 996 | 100 | 999 | 100 | 70-135 | 0 | 35 | mg/kg | 12.09.19 19:49 | |
| Diesel Range Organics (DRO) | <11.5 | 1000 | 1110 | 111 | 1050 | 105 | 70-135 | 6 | 35 | mg/kg | 12.09.19 19:49 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 106 | | 121 | | 119 | | 70-135 | % | 12.09.19 19:49 |
| o-Terphenyl | 108 | | 124 | | 112 | | 70-135 | % | 12.09.19 19:49 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3109933 Matrix: Solid Date Prep: 12.09.19
MB Sample Id: 7692045-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 12.09.19 19:49 | |

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 645537

## LT Environmental, Inc.

PLU BS 11 Federal Batterry

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3109933 Matrix: Soil Date Prep: 12.09.19
Parent Sample Id: 645527-020 MS Sample Id: 645527-020 S MSD Sample Id: 645527-020 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) | <13.9 | 1000 | 985 | 99 | 957 | 96 | 70-135 | 3 | 35 | mg/kg | 12.09.19 20:29 | |
| Diesel Range Organics (DRO) | <11.5 | 1000 | 1020 | 102 | 1060 | 106 | 70-135 | 4 | 35 | mg/kg | 12.09.19 20:29 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 122 | | 116 | | 70-135 | % | 12.09.19 20:29 |
| o-Terphenyl | 115 | | 118 | | 70-135 | % | 12.09.19 20:29 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3109891 Matrix: Solid Date Prep: 12.09.19
MB Sample Id: 7692016-1-BLK LCS Sample Id: 7692016-1-BKS LCSD Sample Id: 7692016-1-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 | 0.102 | 102 | 0.0914 | 91 | 70-130 | 11 | 35 | mg/kg | 12.09.19 10:47 | |
| Toluene | <0.00200 | 0.100 | 0.104 | 104 | 0.0922 | 92 | 70-130 | 12 | 35 | mg/kg | 12.09.19 10:47 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.104 | 104 | 0.0913 | 91 | 71-129 | 13 | 35 | mg/kg | 12.09.19 10:47 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.220 | 110 | 0.194 | 97 | 70-135 | 13 | 35 | mg/kg | 12.09.19 10:47 | |
| o-Xylene | <0.00200 | 0.100 | 0.111 | 111 | 0.0975 | 98 | 71-133 | 13 | 35 | mg/kg | 12.09.19 10:47 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 102 | | 103 | | 101 | | 70-130 | % | 12.09.19 10:47 |
| 4-Bromofluorobenzene | 107 | | 116 | | 115 | | 70-130 | % | 12.09.19 10:47 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3109891 Matrix: Soil Date Prep: 12.09.19
Parent Sample Id: 645473-001 MS Sample Id: 645473-001 S MSD Sample Id: 645473-001 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 | 0.0936 | 94 | 0.0775 | 78 | 70-130 | 19 | 35 | mg/kg | 12.09.19 11:25 | |
| Toluene | <0.00200 | 0.100 | 0.0987 | 99 | 0.0768 | 77 | 70-130 | 25 | 35 | mg/kg | 12.09.19 11:25 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0988 | 99 | 0.0740 | 74 | 71-129 | 29 | 35 | mg/kg | 12.09.19 11:25 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.206 | 103 | 0.151 | 76 | 70-135 | 31 | 35 | mg/kg | 12.09.19 11:25 | |
| o-Xylene | <0.00200 | 0.100 | 0.106 | 106 | 0.0784 | 79 | 71-133 | 30 | 35 | mg/kg | 12.09.19 11:25 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 102 | | 102 | | 70-130 | % | 12.09.19 11:25 |
| 4-Bromofluorobenzene | 121 | | 118 | | 70-130 | % | 12.09.19 11:25 |

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

# Chain of Custody

Work Order No: 645537

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000) www.xenco.com Page 1 of 1

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

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | PLU BS 11 Federal Battery | Turn Around | |
| Project Number: | 012918036 | Routine ☐ | |
| P.O. Number: | | Rush: 24H | |
| Sampler's Name: | ~~Benjamin Belill~~ Luis Del Val | Due Date: | |

| 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: | 6 |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| PH01 | S | 12/5/2019 | 1245 | 6' | 1 | X | X | X |
| PH01A | | | 1325 | 8' | | | | |
| PH01B | | | 1527 | 3' | | | | |
| PH02 | | | 1448 | 2' | | | | |
| PH02A | | | 1450 | 4' | | | | |
| PH02B | | | 1505 | 8' | | | | |

**Work Order Notes**

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

**Sample Comments**

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



| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|
| 1 | | | 12/9/2019 | 2 | | 12/9/19 10:15 |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date 051418 Rev. 2018.1

# Analytical Report 645892

## for

## LT Environmental, Inc.

**Project Manager: Dan Moir**

**PLU BS 11 Federal Battery**

**012918036**

**08-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)

08-JAN-20

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

Reference: XENCO Report No(s): **645892**
**PLU BS 11 Federal Battery**
Project Address:

**Dan Moir**:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 645892. 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. 645892 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 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| FS15A | S | 12-10-19 10:26 | 7 ft | 645892-001 |
| FS16A | S | 12-10-19 10:42 | 7 ft | 645892-002 |
| FS18A | S | 12-10-19 11:26 | 7 ft | 645892-003 |
| FS21 | S | 12-10-19 15:28 | 6 ft | 645892-004 |
| FS22 | S | 12-10-19 15:59 | 6 ft | 645892-005 |
| FS23 | S | 12-10-19 16:15 | 6 ft | 645892-006 |
| FS24 | S | 12-10-19 16:20 | 6 ft | 645892-007 |
| FS25 | S | 12-10-19 16:30 | 6 ft | 645892-008 |
| FS26 | S | 12-10-19 16:45 | 6 ft | 645892-009 |
| SW14 | S | 12-10-19 14:59 | 0 - 6 ft | 645892-010 |
| SW15 | S | 12-10-19 15:10 | 0 - 6 ft | 645892-011 |

**Sample receipt non conformances and comments:**

Per clients email, corrected sample names as follows below. JK 01/08/2020

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

None

**Analytical non conformances and comments:**

Batch: LBA-3110217 BTEX by EPA 8021B

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

# Certificate of Analysis Summary 645892

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU BS 11 Federal Battery

**Project Id:** 012918036
**Contact:** Dan Moir
**Project Location:**

**Date Received in Lab:** Wed Dec-11-19 12:20 pm
**Report Date:** 08-JAN-20
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 645892-001 | | 645892-002 | | 645892-003 | | 645892-004 | | 645892-005 | | 645892-006 | |
| | ***Field Id:*** | FS15A | | FS16A | | FS18A | | FS21 | | FS22 | | FS23 | |
| | ***Depth:*** | 7- ft | | 7- ft | | 7- ft | | 6- ft | | 6- ft | | 6- ft | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Dec-10-19 10:26 | | Dec-10-19 10:42 | | Dec-10-19 11:26 | | Dec-10-19 15:28 | | Dec-10-19 15:59 | | Dec-10-19 16:15 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Dec-11-19 13:00 | | Dec-11-19 13:00 | | Dec-11-19 13:00 | | Dec-11-19 13:00 | | Dec-11-19 13:00 | | Dec-11-19 13:00 | |
| | ***Analyzed:*** | Dec-11-19 18:04 | | Dec-11-19 18:23 | | Dec-11-19 18:42 | | Dec-11-19 19:01 | | Dec-11-19 19:20 | | Dec-11-19 20:24 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Benzene | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 |
| Toluene | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 |
| Ethylbenzene | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 |
| m,p-Xylenes | | <0.00403 | 0.00403 | <0.00399 | 0.00399 | <0.00401 | 0.00401 | <0.00401 | 0.00401 | <0.00403 | 0.00403 | <0.00399 | 0.00399 |
| o-Xylene | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 |
| Total Xylenes | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 |
| Total BTEX | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 |
| **Chloride by EPA 300** | ***Extracted:*** | Dec-12-19 08:40 | | Dec-12-19 08:40 | | Dec-12-19 08:40 | | Dec-12-19 08:40 | | Dec-12-19 08:40 | | Dec-12-19 08:40 | |
| | ***Analyzed:*** | Dec-12-19 09:21 | | Dec-12-19 09:27 | | Dec-12-19 09:32 | | Dec-12-19 09:38 | | Dec-12-19 09:44 | | Dec-12-19 09:50 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 13.1 | 9.98 | 10.5 | 9.96 | <9.98 | 9.98 | <9.92 | 9.92 | <9.94 | 9.94 | <9.96 | 9.96 |
| **TPH by SW8015 Mod** | ***Extracted:*** | Dec-11-19 16:40 | | Dec-11-19 16:40 | | Dec-11-19 16:40 | | Dec-11-19 16:40 | | Dec-11-19 16:40 | | Dec-11-19 16:40 | |
| | ***Analyzed:*** | Dec-12-19 10:25 | | Dec-11-19 19:01 | | Dec-12-19 10:25 | | Dec-11-19 19:21 | | Dec-11-19 19:21 | | Dec-11-19 19:41 | |
| | ***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 | <50.3 | 50.3 | <50.1 | 50.1 | <50.1 | 50.1 | <49.8 | 49.8 | <50.0 | 50.0 |
| Diesel Range Organics (DRO) | | 95.9 | 50.2 | <50.3 | 50.3 | 84.7 | 50.1 | <50.1 | 50.1 | <49.8 | 49.8 | <50.0 | 50.0 |
| Motor Oil Range Hydrocarbons (MRO) | | <50.2 | 50.2 | <50.3 | 50.3 | <50.1 | 50.1 | <50.1 | 50.1 | <49.8 | 49.8 | <50.0 | 50.0 |
| Total GRO-DRO | | 95.9 | 50.2 | <50.3 | 50.3 | 84.7 | 50.1 | <50.1 | 50.1 | <49.8 | 49.8 | <50.0 | 50.0 |
| Total TPH | | 95.9 | 50.2 | <50.3 | 50.3 | 84.7 | 50.1 | <50.1 | 50.1 | <49.8 | 49.8 | <50.0 | 50.0 |

# Certificate of Analysis Summary 645892

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU BS 11 Federal Battery

**Project Id:** 012918036
**Contact:** Dan Moir
**Project Location:**

**Date Received in Lab:** Wed Dec-11-19 12:20 pm
**Report Date:** 08-JAN-20
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 645892-007 | | 645892-008 | | 645892-009 | | 645892-010 | | 645892-011 | |
| | ***Field Id:*** | FS24 | | FS25 | | FS26 | | SW14 | | SW15 | |
| | ***Depth:*** | 6- ft | | 6- ft | | 6- ft | | 0-6 ft | | 0-6 ft | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Dec-10-19 16:20 | | Dec-10-19 16:30 | | Dec-10-19 16:45 | | Dec-10-19 14:59 | | Dec-10-19 15:10 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Dec-11-19 13:00 | | Dec-11-19 13:00 | | Dec-11-19 13:00 | | Dec-11-19 13:00 | | Dec-11-19 13:00 | |
| | ***Analyzed:*** | Dec-11-19 20:43 | | Dec-11-19 21:02 | | Dec-11-19 21:21 | | Dec-11-19 21:40 | | Dec-11-19 22:00 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Benzene | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00201 | 0.00201 |
| Toluene | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00201 | 0.00201 |
| Ethylbenzene | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00201 | 0.00201 |
| m,p-Xylenes | | <0.00401 | 0.00401 | <0.00403 | 0.00403 | <0.00400 | 0.00400 | <0.00404 | 0.00404 | <0.00402 | 0.00402 |
| o-Xylene | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00201 | 0.00201 |
| Total Xylenes | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00201 | 0.00201 |
| Total BTEX | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00201 | 0.00201 |
| **Chloride by EPA 300** | ***Extracted:*** | Dec-12-19 08:40 | | Dec-12-19 08:40 | | Dec-12-19 08:40 | | Dec-12-19 08:40 | | Dec-12-19 08:40 | |
| | ***Analyzed:*** | Dec-12-19 10:19 | | Dec-12-19 10:35 | | Dec-12-19 10:41 | | Dec-12-19 10:47 | | Dec-12-19 10:53 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | <9.96 | 9.96 | <9.98 | 9.98 | <9.92 | 9.92 | 13.0 | 9.88 | <9.88 | 9.88 |
| **TPH by SW8015 Mod** | ***Extracted:*** | Dec-11-19 16:40 | | Dec-11-19 16:40 | | Dec-11-19 16:40 | | Dec-11-19 16:40 | | Dec-11-19 16:40 | |
| | ***Analyzed:*** | Dec-11-19 20:01 | | Dec-11-19 20:01 | | Dec-11-19 20:21 | | Dec-11-19 20:21 | | Dec-11-19 20:41 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | <49.9 | 49.9 | <49.8 | 49.8 | <49.9 | 49.9 | <50.3 | 50.3 | <49.8 | 49.8 |
| Diesel Range Organics (DRO) | | <49.9 | 49.9 | <49.8 | 49.8 | <49.9 | 49.9 | <50.3 | 50.3 | 58.4 | 49.8 |
| Motor Oil Range Hydrocarbons (MRO) | | <49.9 | 49.9 | <49.8 | 49.8 | <49.9 | 49.9 | <50.3 | 50.3 | <49.8 | 49.8 |
| Total GRO-DRO | | <49.9 | 49.9 | <49.8 | 49.8 | <49.9 | 49.9 | <50.3 | 50.3 | 58.4 | 49.8 |
| Total TPH | | <49.9 | 49.9 | <49.8 | 49.8 | <49.9 | 49.9 | <50.3 | 50.3 | 58.4 | 49.8 |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS15A** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-001 | Date Collected: | 12.10.19 10.26 | Sample Depth: | 7 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.12.19 08.40 | Basis: | Wet Weight |
| Seq Number: | 3110256 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **13.1** | 9.98 | mg/kg | 12.12.19 09.21 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.11.19 16.40 | Basis: | Wet Weight |
| Seq Number: | 3110222 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 12.12.19 10.25 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **95.9** | 50.2 | mg/kg | 12.12.19 13.35 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 12.12.19 10.25 | U | 1 |
| **Total GRO-DRO** | PHC628 | **95.9** | 50.2 | mg/kg | 12.12.19 13.35 | | 1 |
| **Total TPH** | PHC635 | **95.9** | 50.2 | mg/kg | 12.12.19 13.35 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 112 | % | 70-135 | 12.12.19 10.25 | |
| o-Terphenyl | 84-15-1 | 113 | % | 70-135 | 12.12.19 10.25 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS15A** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-001 | Date Collected: | 12.10.19 10.26 | Sample Depth: | 7 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.11.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3110217 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 12.11.19 18.04 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 12.11.19 18.04 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 12.11.19 18.04 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00403 | 0.00403 | mg/kg | 12.11.19 18.04 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 12.11.19 18.04 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 12.11.19 18.04 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 12.11.19 18.04 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 118 | % | 70-130 | 12.11.19 18.04 | |
| 1,4-Difluorobenzene | 540-36-3 | 106 | % | 70-130 | 12.11.19 18.04 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS16A** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-002 | Date Collected: | 12.10.19 10.42 | Sample Depth: | 7 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.12.19 08.40 | Basis: | Wet Weight |
| Seq Number: | 3110256 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **10.5** | 9.96 | mg/kg | 12.12.19 09.27 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.11.19 16.40 | Basis: | Wet Weight |
| Seq Number: | 3110222 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.3 | 50.3 | mg/kg | 12.11.19 19.01 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.3 | 50.3 | mg/kg | 12.11.19 19.01 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.3 | 50.3 | mg/kg | 12.11.19 19.01 | U | 1 |
| Total GRO-DRO | PHC628 | <50.3 | 50.3 | mg/kg | 12.11.19 19.01 | U | 1 |
| Total TPH | PHC635 | <50.3 | 50.3 | mg/kg | 12.11.19 19.01 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 89 | % | 70-135 | 12.11.19 19.01 | |
| o-Terphenyl | 84-15-1 | 89 | % | 70-135 | 12.11.19 19.01 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS16A** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-002 | Date Collected: | 12.10.19 10.42 | Sample Depth: | 7 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.11.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3110217 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.11.19 18.23 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.11.19 18.23 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.11.19 18.23 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 12.11.19 18.23 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.11.19 18.23 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.11.19 18.23 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.11.19 18.23 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 121 | % | 70-130 | 12.11.19 18.23 | |
| 1,4-Difluorobenzene | 540-36-3 | 105 | % | 70-130 | 12.11.19 18.23 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS18A** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-003 | Date Collected: | 12.10.19 11.26 | Sample Depth: | 7 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.12.19 08.40 | Basis: | Wet Weight |
| Seq Number: | 3110256 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.98 | 9.98 | mg/kg | 12.12.19 09.32 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.11.19 16.40 | Basis: | Wet Weight |
| Seq Number: | 3110222 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 12.12.19 10.25 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **84.7** | 50.1 | mg/kg | 12.12.19 10.25 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 12.12.19 10.25 | U | 1 |
| **Total GRO-DRO** | PHC628 | **84.7** | 50.1 | mg/kg | 12.12.19 10.25 | | 1 |
| **Total TPH** | PHC635 | **84.7** | 50.1 | mg/kg | 12.12.19 10.25 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 102 | % | 70-135 | 12.12.19 10.25 | |
| o-Terphenyl | 84-15-1 | 104 | % | 70-135 | 12.12.19 10.25 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS18A** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-003 | Date Collected: | 12.10.19 11.26 | Sample Depth: | 7 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.11.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3110217 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.11.19 18.42 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.11.19 18.42 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.11.19 18.42 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 12.11.19 18.42 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.11.19 18.42 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.11.19 18.42 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.11.19 18.42 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 119 | % | 70-130 | 12.11.19 18.42 | |
| 1,4-Difluorobenzene | 540-36-3 | 105 | % | 70-130 | 12.11.19 18.42 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS21** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-004 | Date Collected: | 12.10.19 15.28 | Sample Depth: | 6 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.12.19 08.40 | Basis: | Wet Weight |
| Seq Number: | 3110256 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.92 | 9.92 | mg/kg | 12.12.19 09.38 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.11.19 16.40 | Basis: | Wet Weight |
| Seq Number: | 3110222 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 12.11.19 19.21 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 12.11.19 19.21 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 12.11.19 19.21 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 12.11.19 19.21 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 12.11.19 19.21 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 111 | % | 70-135 | 12.11.19 19.21 | |
| o-Terphenyl | 84-15-1 | 114 | % | 70-135 | 12.11.19 19.21 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS21** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-004 | Date Collected: | 12.10.19 15.28 | Sample Depth: | 6 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.11.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3110217 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.11.19 19.01 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.11.19 19.01 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.11.19 19.01 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 12.11.19 19.01 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.11.19 19.01 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.11.19 19.01 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.11.19 19.01 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 104 | % | 70-130 | 12.11.19 19.01 | |
| 4-Bromofluorobenzene | 460-00-4 | 121 | % | 70-130 | 12.11.19 19.01 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS22** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-005 | Date Collected: | 12.10.19 15.59 | Sample Depth: | 6 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.12.19 08.40 | Basis: | Wet Weight |
| Seq Number: | 3110256 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.94 | 9.94 | mg/kg | 12.12.19 09.44 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.11.19 16.40 | Basis: | Wet Weight |
| Seq Number: | 3110222 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.8 | 49.8 | mg/kg | 12.11.19 19.21 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.8 | 49.8 | mg/kg | 12.11.19 19.21 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.8 | 49.8 | mg/kg | 12.11.19 19.21 | U | 1 |
| Total GRO-DRO | PHC628 | <49.8 | 49.8 | mg/kg | 12.11.19 19.21 | U | 1 |
| Total TPH | PHC635 | <49.8 | 49.8 | mg/kg | 12.11.19 19.21 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 76 | % | 70-135 | 12.11.19 19.21 | |
| o-Terphenyl | 84-15-1 | 83 | % | 70-135 | 12.11.19 19.21 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS22** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-005 | Date Collected: | 12.10.19 15.59 | Sample Depth: | 6 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.11.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3110217 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 12.11.19 19.20 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 12.11.19 19.20 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 12.11.19 19.20 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00403 | 0.00403 | mg/kg | 12.11.19 19.20 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 12.11.19 19.20 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 12.11.19 19.20 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 12.11.19 19.20 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 121 | % | 70-130 | 12.11.19 19.20 | |
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 12.11.19 19.20 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS23** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-006 | Date Collected: | 12.10.19 16.15 | Sample Depth: | 6 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.12.19 08.40 | Basis: | Wet Weight |
| Seq Number: | 3110256 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.96 | 9.96 | mg/kg | 12.12.19 09.50 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.11.19 16.40 | Basis: | Wet Weight |
| Seq Number: | 3110222 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 12.11.19 19.41 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 12.11.19 19.41 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 12.11.19 19.41 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 12.11.19 19.41 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 12.11.19 19.41 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 84 | % | 70-135 | 12.11.19 19.41 | |
| o-Terphenyl | 84-15-1 | 91 | % | 70-135 | 12.11.19 19.41 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS23** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-006 | Date Collected: | 12.10.19 16.15 | Sample Depth: | 6 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.11.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3110217 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.11.19 20.24 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.11.19 20.24 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.11.19 20.24 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 12.11.19 20.24 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.11.19 20.24 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.11.19 20.24 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.11.19 20.24 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 114 | % | 70-130 | 12.11.19 20.24 | |
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 12.11.19 20.24 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS24** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-007 | Date Collected: | 12.10.19 16.20 | Sample Depth: | 6 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.12.19 08.40 | Basis: | Wet Weight |
| Seq Number: | 3110256 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.96 | 9.96 | mg/kg | 12.12.19 10.19 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.11.19 16.40 | Basis: | Wet Weight |
| Seq Number: | 3110222 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.9 | 49.9 | mg/kg | 12.11.19 20.01 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.9 | 49.9 | mg/kg | 12.11.19 20.01 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.9 | 49.9 | mg/kg | 12.11.19 20.01 | U | 1 |
| Total GRO-DRO | PHC628 | <49.9 | 49.9 | mg/kg | 12.11.19 20.01 | U | 1 |
| Total TPH | PHC635 | <49.9 | 49.9 | mg/kg | 12.11.19 20.01 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 72 | % | 70-135 | 12.11.19 20.01 | |
| o-Terphenyl | 84-15-1 | 75 | % | 70-135 | 12.11.19 20.01 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS24** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-007 | Date Collected: | 12.10.19 16.20 | Sample Depth: | 6 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.11.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3110217 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.11.19 20.43 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.11.19 20.43 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.11.19 20.43 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 12.11.19 20.43 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.11.19 20.43 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.11.19 20.43 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.11.19 20.43 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 104 | % | 70-130 | 12.11.19 20.43 | |
| 4-Bromofluorobenzene | 460-00-4 | 120 | % | 70-130 | 12.11.19 20.43 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS25** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-008 | Date Collected: | 12.10.19 16.30 | Sample Depth: | 6 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.12.19 08.40 | Basis: | Wet Weight |
| Seq Number: | 3110256 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.98 | 9.98 | mg/kg | 12.12.19 10.35 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.11.19 16.40 | Basis: | Wet Weight |
| Seq Number: | 3110222 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.8 | 49.8 | mg/kg | 12.11.19 20.01 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.8 | 49.8 | mg/kg | 12.11.19 20.01 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.8 | 49.8 | mg/kg | 12.11.19 20.01 | U | 1 |
| Total GRO-DRO | PHC628 | <49.8 | 49.8 | mg/kg | 12.11.19 20.01 | U | 1 |
| Total TPH | PHC635 | <49.8 | 49.8 | mg/kg | 12.11.19 20.01 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 83 | % | 70-135 | 12.11.19 20.01 | |
| o-Terphenyl | 84-15-1 | 89 | % | 70-135 | 12.11.19 20.01 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS25** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-008 | Date Collected: | 12.10.19 16.30 | Sample Depth: | 6 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.11.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3110217 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 12.11.19 21.02 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 12.11.19 21.02 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 12.11.19 21.02 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00403 | 0.00403 | mg/kg | 12.11.19 21.02 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 12.11.19 21.02 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 12.11.19 21.02 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 12.11.19 21.02 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 100 | % | 70-130 | 12.11.19 21.02 | |
| 4-Bromofluorobenzene | 460-00-4 | 116 | % | 70-130 | 12.11.19 21.02 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS26** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-009 | Date Collected: | 12.10.19 16.45 | Sample Depth: | 6 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.12.19 08.40 | Basis: | Wet Weight |
| Seq Number: | 3110256 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.92 | 9.92 | mg/kg | 12.12.19 10.41 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.11.19 16.40 | Basis: | Wet Weight |
| Seq Number: | 3110222 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.9 | 49.9 | mg/kg | 12.11.19 20.21 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.9 | 49.9 | mg/kg | 12.11.19 20.21 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.9 | 49.9 | mg/kg | 12.11.19 20.21 | U | 1 |
| Total GRO-DRO | PHC628 | <49.9 | 49.9 | mg/kg | 12.11.19 20.21 | U | 1 |
| Total TPH | PHC635 | <49.9 | 49.9 | mg/kg | 12.11.19 20.21 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 95 | % | 70-135 | 12.11.19 20.21 | |
| o-Terphenyl | 84-15-1 | 96 | % | 70-135 | 12.11.19 20.21 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS26** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-009 | Date Collected: | 12.10.19 16.45 | Sample Depth: | 6 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.11.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3110217 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.11.19 21.21 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.11.19 21.21 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.11.19 21.21 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00400 | 0.00400 | mg/kg | 12.11.19 21.21 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.11.19 21.21 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.11.19 21.21 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.11.19 21.21 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 101 | % | 70-130 | 12.11.19 21.21 | |
| 4-Bromofluorobenzene | 460-00-4 | 116 | % | 70-130 | 12.11.19 21.21 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW14** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-010 | Date Collected: | 12.10.19 14.59 | Sample Depth: | 0 - 6 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.12.19 08.40 | Basis: | Wet Weight |
| Seq Number: | 3110256 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **13.0** | 9.88 | mg/kg | 12.12.19 10.47 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.11.19 16.40 | Basis: | Wet Weight |
| Seq Number: | 3110222 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.3 | 50.3 | mg/kg | 12.11.19 20.21 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.3 | 50.3 | mg/kg | 12.11.19 20.21 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.3 | 50.3 | mg/kg | 12.11.19 20.21 | U | 1 |
| Total GRO-DRO | PHC628 | <50.3 | 50.3 | mg/kg | 12.11.19 20.21 | U | 1 |
| Total TPH | PHC635 | <50.3 | 50.3 | mg/kg | 12.11.19 20.21 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 84 | % | 70-135 | 12.11.19 20.21 | |
| o-Terphenyl | 84-15-1 | 89 | % | 70-135 | 12.11.19 20.21 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW14** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-010 | Date Collected: | 12.10.19 14.59 | Sample Depth: | 0 - 6 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.11.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3110217 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 12.11.19 21.40 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 12.11.19 21.40 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 12.11.19 21.40 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00404 | 0.00404 | mg/kg | 12.11.19 21.40 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 12.11.19 21.40 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 12.11.19 21.40 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 12.11.19 21.40 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 121 | % | 70-130 | 12.11.19 21.40 | |
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 12.11.19 21.40 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW15** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-011 | Date Collected: | 12.10.19 15.10 | Sample Depth: | 0 - 6 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.12.19 08.40 | Basis: | Wet Weight |
| Seq Number: | 3110256 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.88 | 9.88 | mg/kg | 12.12.19 10.53 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.11.19 16.40 | Basis: | Wet Weight |
| Seq Number: | 3110222 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.8 | 49.8 | mg/kg | 12.11.19 20.41 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **58.4** | 49.8 | mg/kg | 12.11.19 20.41 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.8 | 49.8 | mg/kg | 12.11.19 20.41 | U | 1 |
| **Total GRO-DRO** | PHC628 | **58.4** | 49.8 | mg/kg | 12.11.19 20.41 | | 1 |
| **Total TPH** | PHC635 | **58.4** | 49.8 | mg/kg | 12.11.19 20.41 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 78 | % | 70-135 | 12.11.19 20.41 | |
| o-Terphenyl | 84-15-1 | 81 | % | 70-135 | 12.11.19 20.41 | |

# Certificate of Analytical Results 645892

## LT Environmental, Inc., Arvada, CO

PLU BS 11 Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW15** | Matrix: | Soil | Date Received: | 12.11.19 12.20 |
| Lab Sample Id: | 645892-011 | Date Collected: | 12.10.19 15.10 | Sample Depth: | 0 - 6 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.11.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3110217 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 12.11.19 22.00 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 12.11.19 22.00 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 12.11.19 22.00 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 12.11.19 22.00 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 12.11.19 22.00 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 12.11.19 22.00 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 12.11.19 22.00 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 118 | % | 70-130 | 12.11.19 22.00 | |
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 12.11.19 22.00 | |

# 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 645892

## LT Environmental, Inc.

PLU BS 11 Federal Battery

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3110256 Matrix: Solid Date Prep: 12.12.19
MB Sample Id: 7692243-1-BLK LCS Sample Id: 7692243-1-BKS LCSD Sample Id: 7692243-1-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 | 260 | 104 | 265 | 106 | 90-110 | 2 | 20 | mg/kg | 12.12.19 09:09 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3110256 Matrix: Soil Date Prep: 12.12.19
Parent Sample Id: 645892-006 MS Sample Id: 645892-006 S MSD Sample Id: 645892-006 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 9.14 | 200 | 214 | 102 | 214 | 103 | 90-110 | 0 | 20 | mg/kg | 12.12.19 10:07 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3110256 Matrix: Soil Date Prep: 12.12.19
Parent Sample Id: 645892-011 MS Sample Id: 645892-011 S MSD Sample Id: 645892-011 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 7.60 | 198 | 211 | 103 | 211 | 103 | 90-110 | 0 | 20 | mg/kg | 12.12.19 10:59 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3110222 Matrix: Solid Date Prep: 12.11.19
MB Sample Id: 7692253-1-BLK LCS Sample Id: 7692253-1-BKS LCSD Sample Id: 7692253-1-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 | 973 | 97 | 923 | 92 | 70-135 | 5 | 35 | mg/kg | 12.11.19 17:18 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 823 | 82 | 807 | 81 | 70-135 | 2 | 35 | mg/kg | 12.11.19 17:18 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 71 | | 100 | | 95 | | 70-135 | % | 12.11.19 17:18 |
| o-Terphenyl | 74 | | 93 | | 91 | | 70-135 | % | 12.11.19 17:18 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3110222 Matrix: Solid Date Prep: 12.11.19
MB Sample Id: 7692253-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 12.11.19 16:58 | |

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 645892

## LT Environmental, Inc.

PLU BS 11 Federal Battery

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3110222 Matrix: Soil Date Prep: 12.11.19
Parent Sample Id: 645890-001 MS Sample Id: 645890-001 S MSD Sample Id: 645890-001 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) | <50.0 | 1000 | 925 | 93 | 869 | 86 | 70-135 | 6 | 35 | mg/kg | 12.11.19 17:41 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 832 | 83 | 772 | 76 | 70-135 | 7 | 35 | mg/kg | 12.11.19 17:41 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 98 | | 91 | | 70-135 | % | 12.11.19 17:41 |
| o-Terphenyl | 99 | | 86 | | 70-135 | % | 12.11.19 17:41 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3110217 Matrix: Solid Date Prep: 12.11.19
MB Sample Id: 7692204-1-BLK LCS Sample Id: 7692204-1-BKS LCSD Sample Id: 7692204-1-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 | 0.0954 | 95 | 0.0930 | 93 | 70-130 | 3 | 35 | mg/kg | 12.11.19 14:53 | |
| Toluene | <0.00200 | 0.100 | 0.0966 | 97 | 0.0956 | 96 | 70-130 | 1 | 35 | mg/kg | 12.11.19 14:53 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0953 | 95 | 0.0950 | 95 | 71-129 | 0 | 35 | mg/kg | 12.11.19 14:53 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.201 | 101 | 0.201 | 101 | 70-135 | 0 | 35 | mg/kg | 12.11.19 14:53 | |
| o-Xylene | <0.00200 | 0.100 | 0.101 | 101 | 0.102 | 102 | 71-133 | 1 | 35 | mg/kg | 12.11.19 14:53 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 101 | | 104 | | 103 | | 70-130 | % | 12.11.19 14:53 |
| 4-Bromofluorobenzene | 108 | | 115 | | 116 | | 70-130 | % | 12.11.19 14:53 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3110217 Matrix: Soil Date Prep: 12.11.19
Parent Sample Id: 645890-001 MS Sample Id: 645890-001 S MSD Sample Id: 645890-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | 0.101 | 0.106 | 105 | 0.0782 | 77 | 70-130 | 30 | 35 | mg/kg | 12.11.19 15:24 | |
| Toluene | <0.00201 | 0.101 | 0.104 | 103 | 0.0866 | 86 | 70-130 | 18 | 35 | mg/kg | 12.11.19 15:24 | |
| Ethylbenzene | <0.00201 | 0.101 | 0.0978 | 97 | 0.0816 | 81 | 71-129 | 18 | 35 | mg/kg | 12.11.19 15:24 | |
| m,p-Xylenes | <0.00402 | 0.201 | 0.205 | 102 | 0.173 | 86 | 70-135 | 17 | 35 | mg/kg | 12.11.19 15:24 | |
| o-Xylene | <0.00201 | 0.101 | 0.104 | 103 | 0.0864 | 86 | 71-133 | 18 | 35 | mg/kg | 12.11.19 15:24 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 107 | | 99 | | 70-130 | % | 12.11.19 15:24 |
| 4-Bromofluorobenzene | 122 | | 123 | | 70-130 | % | 12.11.19 15:24 |

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
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000) www.xenco.com

**Work Order No:** 445892

Page 1 of 2

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

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | PLU BS 11 Federal Battery | Turn Around | |
| Project Number: | 012918036 | Routine ☐ | |
| P.O. Number: | | Rush: 24hr | |
| Sampler's Name: | ~~Benjamin Belill~~ Luis Del Val | Due Date: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No |
| Temperature (°C): | 2.4 | Thermometer ID | |
| Received Intact: | Yes No | T-NM-007 | |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No N/A | Total Containers: | 11 |

**ANALYSIS REQUEST**

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| FS15A | S | 12/11/2019 | 1026 | 7' | X | X | X | X |
| FS16A | | | 1042 | 7' | | | | |
| FS18A | | | 1126 | 7' | | | | |
| FS22 | | | 1528 | 6' | | | | |
| FS23 | | | 1559 | 6' | | | | |
| ~~FS24~~ FS24 | | | 1615 | 6' | | | | |
| FS25 | | | 1620 | 6' | | | | |
| FS26 | | | 1630 | 6' | | | | |
| FS27 | | | 1645 | 6' | | | | |
| SW14 | | | 1459 | 0-6' | | | | |

**Work Order Notes**

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

**Sample Comments**

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

*Circle Method(s) and Metal(s) to be analyzed* **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg



| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|
| 1 | Luis Del Val | | 12/11/19 12:20 | 2 | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date 051418 Rev. 2018.1

# 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
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000) www.xenco.com

**Work Order No:** 645892

Page 2 of 2

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

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | PLU BS 11 Federal Battery | Turn Around | |
| Project Number: | 01291M036 | Routine ☐ | |
| P.O. Number: | | Rush: 24hr | |
| Sampler's Name: | ~~Benjamin Belill~~ Luis Del Val | Due Date: | |

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

**ANALYSIS REQUEST**

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| SW15 | S | 12/10/2019 | 1510 | 0-6' | X | X | X | X |
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**Work Order Notes**

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

**Sample Comments**

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



| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| 1 Luis Del Val | [signature] | 12/11/19 12:20 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date 051418 Rev. 2018.1

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 12/11/2019 12:20:00 PM

**Work Order #:** 645892

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

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

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | 2.6 |
| #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: 12/11/2019

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

# Analytical Report 646243

## for

## LT Environmental, Inc.

**Project Manager: Dan Moir**

**PLU BS II Federal Battery**

**012918036**

**16-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)

16-DEC-19

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

Reference: XENCO Report No(s): **646243**
**PLU BS II Federal Battery**
Project Address:

**Dan Moir**:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 646243. 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. 646243 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 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| PH03 | S | 12-12-19 12:20 | 2 ft | 646243-001 |
| PH03A | S | 12-12-19 12:40 | 5 ft | 646243-002 |
| PH03B | S | 12-12-19 13:00 | 8 ft | 646243-003 |
| PH04 | S | 12-12-19 13:25 | 2 ft | 646243-004 |
| PH04A | S | 12-12-19 13:45 | 5 ft | 646243-005 |
| PH04B | S | 12-12-19 14:00 | 8 ft | 646243-006 |
| PH05 | S | 12-12-19 14:20 | 2 ft | 646243-007 |
| PH05A | S | 12-12-19 14:35 | 5 ft | 646243-008 |
| PH05B | S | 12-12-19 14:45 | 8 ft | 646243-009 |

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3110527 BTEX by EPA 8021B

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

# Certificate of Analysis Summary 646243

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU BS II Federal Battery

**Project Id:** 012918036
**Contact:** Dan Moir
**Project Location:**

**Date Received in Lab:** Fri Dec-13-19 09:05 am
**Report Date:** 16-DEC-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 646243-001 | | 646243-002 | | 646243-003 | | 646243-004 | | 646243-005 | | 646243-006 | |
| | ***Field Id:*** | PH03 | | PH03A | | PH03B | | PH04 | | PH04A | | PH04B | |
| | ***Depth:*** | 2- ft | | 5- ft | | 8- ft | | 2- ft | | 5- ft | | 8- ft | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Dec-12-19 12:20 | | Dec-12-19 12:40 | | Dec-12-19 13:00 | | Dec-12-19 13:25 | | Dec-12-19 13:45 | | Dec-12-19 14:00 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Dec-13-19 10:06 | | Dec-13-19 10:06 | | Dec-13-19 10:06 | | Dec-13-19 10:06 | | Dec-13-19 10:06 | | Dec-13-19 10:06 | |
| | ***Analyzed:*** | Dec-13-19 12:43 | | Dec-13-19 13:02 | | Dec-13-19 13:22 | | Dec-13-19 13:41 | | Dec-13-19 14:00 | | Dec-13-19 14:19 | |
| | ***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 | <0.00202 | 0.00202 | <0.00201 | 0.00201 | <0.00198 | 0.00198 | <0.00202 | 0.00202 |
| Toluene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00201 | 0.00201 | <0.00198 | 0.00198 | <0.00202 | 0.00202 |
| Ethylbenzene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00201 | 0.00201 | <0.00198 | 0.00198 | <0.00202 | 0.00202 |
| m,p-Xylenes | | <0.00401 | 0.00401 | <0.00399 | 0.00399 | <0.00403 | 0.00403 | <0.00402 | 0.00402 | <0.00396 | 0.00396 | <0.00404 | 0.00404 |
| o-Xylene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00201 | 0.00201 | <0.00198 | 0.00198 | <0.00202 | 0.00202 |
| Total Xylenes | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00201 | 0.00201 | <0.00198 | 0.00198 | <0.00202 | 0.00202 |
| Total BTEX | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00201 | 0.00201 | <0.00198 | 0.00198 | <0.00202 | 0.00202 |
| **Chloride by EPA 300** | ***Extracted:*** | Dec-13-19 11:02 | | Dec-13-19 11:02 | | Dec-13-19 11:02 | | Dec-13-19 11:02 | | Dec-13-19 11:02 | | Dec-13-19 11:02 | |
| | ***Analyzed:*** | Dec-13-19 13:45 | | Dec-13-19 14:02 | | Dec-13-19 14:08 | | Dec-13-19 14:14 | | Dec-13-19 14:20 | | Dec-13-19 14:37 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 79.8 | 10.1 | 46.9 | 10.0 | 85.6 | 10.0 | <10.1 | 10.1 | 38.0 | 10.0 | 219 | 10.0 |
| **TPH by SW8015 Mod** | ***Extracted:*** | Dec-13-19 11:30 | | Dec-13-19 11:30 | | Dec-13-19 11:30 | | Dec-13-19 11:30 | | Dec-13-19 11:30 | | Dec-13-19 11:30 | |
| | ***Analyzed:*** | Dec-13-19 11:50 | | Dec-13-19 12:10 | | Dec-13-19 12:30 | | Dec-13-19 12:30 | | Dec-13-19 12:50 | | Dec-13-19 12:50 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | <49.8 | 49.8 | <49.9 | 49.9 | <49.9 | 49.9 | <50.0 | 50.0 | <50.1 | 50.1 | <49.8 | 49.8 |
| Diesel Range Organics (DRO) | | <49.8 | 49.8 | <49.9 | 49.9 | <49.9 | 49.9 | <50.0 | 50.0 | <50.1 | 50.1 | <49.8 | 49.8 |
| Motor Oil Range Hydrocarbons (MRO) | | <49.8 | 49.8 | <49.9 | 49.9 | <49.9 | 49.9 | <50.0 | 50.0 | <50.1 | 50.1 | <49.8 | 49.8 |
| Total GRO-DRO | | <49.8 | 49.8 | <49.9 | 49.9 | <49.9 | 49.9 | <50.0 | 50.0 | <50.1 | 50.1 | <49.8 | 49.8 |
| Total TPH | | <49.8 | 49.8 | <49.9 | 49.9 | <49.9 | 49.9 | <50.0 | 50.0 | <50.1 | 50.1 | <49.8 | 49.8 |





Jessica Kramer
Project Assistant

# Certificate of Analysis Summary 646243

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU BS II Federal Battery

**Project Id:** 012918036
**Contact:** Dan Moir
**Project Location:**

**Date Received in Lab:** Fri Dec-13-19 09:05 am
**Report Date:** 16-DEC-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 646243-007 | | 646243-008 | | 646243-009 | | | | |
| | ***Field Id:*** | PH05 | | PH05A | | PH05B | | | | |
| | ***Depth:*** | 2- ft | | 5- ft | | 8- ft | | | | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | | | |
| | ***Sampled:*** | Dec-12-19 14:20 | | Dec-12-19 14:35 | | Dec-12-19 14:45 | | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Dec-13-19 10:06 | | Dec-13-19 10:06 | | Dec-13-19 10:06 | | | | |
| | ***Analyzed:*** | Dec-13-19 14:38 | | Dec-13-19 14:57 | | Dec-13-19 15:16 | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | |
| Benzene | | <0.00199 | 0.00199 | <0.00198 | 0.00198 | <0.00201 | 0.00201 | | | |
| Toluene | | <0.00199 | 0.00199 | <0.00198 | 0.00198 | <0.00201 | 0.00201 | | | |
| Ethylbenzene | | <0.00199 | 0.00199 | <0.00198 | 0.00198 | <0.00201 | 0.00201 | | | |
| m,p-Xylenes | | <0.00398 | 0.00398 | <0.00396 | 0.00396 | <0.00402 | 0.00402 | | | |
| o-Xylene | | <0.00199 | 0.00199 | <0.00198 | 0.00198 | <0.00201 | 0.00201 | | | |
| Total Xylenes | | <0.00199 | 0.00199 | <0.00198 | 0.00198 | <0.00201 | 0.00201 | | | |
| Total BTEX | | <0.00199 | 0.00199 | <0.00198 | 0.00198 | <0.00201 | 0.00201 | | | |
| **Chloride by EPA 300** | ***Extracted:*** | Dec-13-19 11:02 | | Dec-13-19 11:02 | | Dec-13-19 11:02 | | | | |
| | ***Analyzed:*** | Dec-13-19 14:43 | | Dec-13-19 14:49 | | Dec-13-19 14:54 | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | |
| Chloride | | 13.5 | 10.1 | 134 | 9.90 | 120 | 10.1 | | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | Dec-13-19 11:30 | | Dec-13-19 11:30 | | Dec-13-19 11:30 | | | | |
| | ***Analyzed:*** | Dec-13-19 13:10 | | Dec-13-19 13:10 | | Dec-13-19 13:30 | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | |
| Gasoline Range Hydrocarbons (GRO) | | <50.2 | 50.2 | <50.2 | 50.2 | <50.0 | 50.0 | | | |
| Diesel Range Organics (DRO) | | <50.2 | 50.2 | <50.2 | 50.2 | <50.0 | 50.0 | | | |
| Motor Oil Range Hydrocarbons (MRO) | | <50.2 | 50.2 | <50.2 | 50.2 | <50.0 | 50.0 | | | |
| Total GRO-DRO | | <50.2 | 50.2 | <50.2 | 50.2 | <50.0 | 50.0 | | | |
| Total TPH | | <50.2 | 50.2 | <50.2 | 50.2 | <50.0 | 50.0 | | | |





Jessica Kramer
Project Assistant

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH03** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-001 | Date Collected: | 12.12.19 12.20 | Sample Depth: | 2 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 11.02 | Basis: | Wet Weight |
| Seq Number: | 3110529 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **79.8** | 10.1 | mg/kg | 12.13.19 13.45 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.13.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3110481 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.8 | 49.8 | mg/kg | 12.13.19 11.50 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.8 | 49.8 | mg/kg | 12.13.19 11.50 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.8 | 49.8 | mg/kg | 12.13.19 11.50 | U | 1 |
| Total GRO-DRO | PHC628 | <49.8 | 49.8 | mg/kg | 12.13.19 11.50 | U | 1 |
| Total TPH | PHC635 | <49.8 | 49.8 | mg/kg | 12.13.19 11.50 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 112 | % | 70-135 | 12.13.19 11.50 | |
| o-Terphenyl | 84-15-1 | 117 | % | 70-135 | 12.13.19 11.50 | |

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH03** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-001 | Date Collected: | 12.12.19 12.20 | Sample Depth: | 2 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 10.06 | Basis: | Wet Weight |
| Seq Number: | 3110527 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.13.19 12.43 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.13.19 12.43 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.13.19 12.43 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 12.13.19 12.43 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.13.19 12.43 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.13.19 12.43 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.13.19 12.43 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 12.13.19 12.43 | |
| 4-Bromofluorobenzene | 460-00-4 | 114 | % | 70-130 | 12.13.19 12.43 | |

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH03A** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-002 | Date Collected: | 12.12.19 12.40 | Sample Depth: | 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 11.02 | Basis: | Wet Weight |
| Seq Number: | 3110529 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **46.9** | 10.0 | mg/kg | 12.13.19 14.02 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.13.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3110481 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.9 | 49.9 | mg/kg | 12.13.19 12.10 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.9 | 49.9 | mg/kg | 12.13.19 12.10 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.9 | 49.9 | mg/kg | 12.13.19 12.10 | U | 1 |
| Total GRO-DRO | PHC628 | <49.9 | 49.9 | mg/kg | 12.13.19 12.10 | U | 1 |
| Total TPH | PHC635 | <49.9 | 49.9 | mg/kg | 12.13.19 12.10 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 111 | % | 70-135 | 12.13.19 12.10 | |
| o-Terphenyl | 84-15-1 | 111 | % | 70-135 | 12.13.19 12.10 | |

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH03A** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-002 | Date Collected: | 12.12.19 12.40 | Sample Depth: | 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 10.06 | Basis: | Wet Weight |
| Seq Number: | 3110527 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.13.19 13.02 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.13.19 13.02 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.13.19 13.02 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 12.13.19 13.02 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.13.19 13.02 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.13.19 13.02 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.13.19 13.02 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 105 | % | 70-130 | 12.13.19 13.02 | |
| 4-Bromofluorobenzene | 460-00-4 | 126 | % | 70-130 | 12.13.19 13.02 | |

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH03B** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-003 | Date Collected: | 12.12.19 13.00 | Sample Depth: | 8 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 11.02 | Basis: | Wet Weight |
| Seq Number: | 3110529 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **85.6** | 10.0 | mg/kg | 12.13.19 14.08 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.13.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3110481 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.9 | 49.9 | mg/kg | 12.13.19 12.30 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.9 | 49.9 | mg/kg | 12.13.19 12.30 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.9 | 49.9 | mg/kg | 12.13.19 12.30 | U | 1 |
| Total GRO-DRO | PHC628 | <49.9 | 49.9 | mg/kg | 12.13.19 12.30 | U | 1 |
| Total TPH | PHC635 | <49.9 | 49.9 | mg/kg | 12.13.19 12.30 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 105 | % | 70-135 | 12.13.19 12.30 | |
| o-Terphenyl | 84-15-1 | 112 | % | 70-135 | 12.13.19 12.30 | |

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH03B** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-003 | Date Collected: | 12.12.19 13.00 | Sample Depth: | 8 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 10.06 | Basis: | Wet Weight |
| Seq Number: | 3110527 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 12.13.19 13.22 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 12.13.19 13.22 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 12.13.19 13.22 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00403 | 0.00403 | mg/kg | 12.13.19 13.22 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 12.13.19 13.22 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 12.13.19 13.22 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 12.13.19 13.22 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 126 | % | 70-130 | 12.13.19 13.22 | |
| 1,4-Difluorobenzene | 540-36-3 | 106 | % | 70-130 | 12.13.19 13.22 | |

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH04** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-004 | Date Collected: | 12.12.19 13.25 | Sample Depth: | 2 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 11.02 | Basis: | Wet Weight |
| Seq Number: | 3110529 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <10.1 | 10.1 | mg/kg | 12.13.19 14.14 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.13.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3110481 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 12.13.19 12.30 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 12.13.19 12.30 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 12.13.19 12.30 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 12.13.19 12.30 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 12.13.19 12.30 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 108 | % | 70-135 | 12.13.19 12.30 | |
| o-Terphenyl | 84-15-1 | 112 | % | 70-135 | 12.13.19 12.30 | |

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH04** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-004 | Date Collected: | 12.12.19 13.25 | Sample Depth: | 2 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 10.06 | Basis: | Wet Weight |
| Seq Number: | 3110527 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 12.13.19 13.41 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 12.13.19 13.41 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 12.13.19 13.41 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 12.13.19 13.41 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 12.13.19 13.41 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 12.13.19 13.41 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 12.13.19 13.41 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 119 | % | 70-130 | 12.13.19 13.41 | |
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 12.13.19 13.41 | |

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH04A** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-005 | Date Collected: | 12.12.19 13.45 | Sample Depth: | 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 11.02 | Basis: | Wet Weight |
| Seq Number: | 3110529 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **38.0** | 10.0 | mg/kg | 12.13.19 14.20 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.13.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3110481 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 12.13.19 12.50 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 12.13.19 12.50 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 12.13.19 12.50 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 12.13.19 12.50 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 12.13.19 12.50 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 112 | % | 70-135 | 12.13.19 12.50 | |
| o-Terphenyl | 84-15-1 | 114 | % | 70-135 | 12.13.19 12.50 | |

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH04A** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-005 | Date Collected: | 12.12.19 13.45 | Sample Depth: | 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 10.06 | Basis: | Wet Weight |
| Seq Number: | 3110527 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00198 | 0.00198 | mg/kg | 12.13.19 14.00 | U | 1 |
| Toluene | 108-88-3 | <0.00198 | 0.00198 | mg/kg | 12.13.19 14.00 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00198 | 0.00198 | mg/kg | 12.13.19 14.00 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00396 | 0.00396 | mg/kg | 12.13.19 14.00 | U | 1 |
| o-Xylene | 95-47-6 | <0.00198 | 0.00198 | mg/kg | 12.13.19 14.00 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00198 | 0.00198 | mg/kg | 12.13.19 14.00 | U | 1 |
| Total BTEX | | <0.00198 | 0.00198 | mg/kg | 12.13.19 14.00 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 12.13.19 14.00 | |
| 4-Bromofluorobenzene | 460-00-4 | 120 | % | 70-130 | 12.13.19 14.00 | |

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH04B** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-006 | Date Collected: | 12.12.19 14.00 | Sample Depth: | 8 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 11.02 | Basis: | Wet Weight |
| Seq Number: | 3110529 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **219** | 10.0 | mg/kg | 12.13.19 14.37 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.13.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3110481 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.8 | 49.8 | mg/kg | 12.13.19 12.50 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.8 | 49.8 | mg/kg | 12.13.19 12.50 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.8 | 49.8 | mg/kg | 12.13.19 12.50 | U | 1 |
| Total GRO-DRO | PHC628 | <49.8 | 49.8 | mg/kg | 12.13.19 12.50 | U | 1 |
| Total TPH | PHC635 | <49.8 | 49.8 | mg/kg | 12.13.19 12.50 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 107 | % | 70-135 | 12.13.19 12.50 | |
| o-Terphenyl | 84-15-1 | 111 | % | 70-135 | 12.13.19 12.50 | |

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH04B** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-006 | Date Collected: | 12.12.19 14.00 | Sample Depth: | 8 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 10.06 | Basis: | Wet Weight |
| Seq Number: | 3110527 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 12.13.19 14.19 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 12.13.19 14.19 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 12.13.19 14.19 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00404 | 0.00404 | mg/kg | 12.13.19 14.19 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 12.13.19 14.19 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 12.13.19 14.19 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 12.13.19 14.19 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 105 | % | 70-130 | 12.13.19 14.19 | |
| 4-Bromofluorobenzene | 460-00-4 | 124 | % | 70-130 | 12.13.19 14.19 | |

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH05** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-007 | Date Collected: | 12.12.19 14.20 | Sample Depth: | 2 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 11.02 | Basis: | Wet Weight |
| Seq Number: | 3110529 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **13.5** | 10.1 | mg/kg | 12.13.19 14.43 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.13.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3110481 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 12.13.19 13.10 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.2 | 50.2 | mg/kg | 12.13.19 13.10 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 12.13.19 13.10 | U | 1 |
| Total GRO-DRO | PHC628 | <50.2 | 50.2 | mg/kg | 12.13.19 13.10 | U | 1 |
| Total TPH | PHC635 | <50.2 | 50.2 | mg/kg | 12.13.19 13.10 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 106 | % | 70-135 | 12.13.19 13.10 | |
| o-Terphenyl | 84-15-1 | 111 | % | 70-135 | 12.13.19 13.10 | |

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH05** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-007 | Date Collected: | 12.12.19 14.20 | Sample Depth: | 2 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 10.06 | Basis: | Wet Weight |
| Seq Number: | 3110527 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 12.13.19 14.38 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 12.13.19 14.38 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 12.13.19 14.38 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 12.13.19 14.38 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 12.13.19 14.38 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 12.13.19 14.38 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 12.13.19 14.38 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 101 | % | 70-130 | 12.13.19 14.38 | |
| 4-Bromofluorobenzene | 460-00-4 | 120 | % | 70-130 | 12.13.19 14.38 | |

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH05A** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-008 | Date Collected: | 12.12.19 14.35 | Sample Depth: | 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 11.02 | Basis: | Wet Weight |
| Seq Number: | 3110529 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **134** | 9.90 | mg/kg | 12.13.19 14.49 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.13.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3110481 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 12.13.19 13.10 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.2 | 50.2 | mg/kg | 12.13.19 13.10 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 12.13.19 13.10 | U | 1 |
| Total GRO-DRO | PHC628 | <50.2 | 50.2 | mg/kg | 12.13.19 13.10 | U | 1 |
| Total TPH | PHC635 | <50.2 | 50.2 | mg/kg | 12.13.19 13.10 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 106 | % | 70-135 | 12.13.19 13.10 | |
| o-Terphenyl | 84-15-1 | 109 | % | 70-135 | 12.13.19 13.10 | |

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH05A** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-008 | Date Collected: | 12.12.19 14.35 | Sample Depth: | 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 10.06 | Basis: | Wet Weight |
| Seq Number: | 3110527 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00198 | 0.00198 | mg/kg | 12.13.19 14.57 | U | 1 |
| Toluene | 108-88-3 | <0.00198 | 0.00198 | mg/kg | 12.13.19 14.57 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00198 | 0.00198 | mg/kg | 12.13.19 14.57 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00396 | 0.00396 | mg/kg | 12.13.19 14.57 | U | 1 |
| o-Xylene | 95-47-6 | <0.00198 | 0.00198 | mg/kg | 12.13.19 14.57 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00198 | 0.00198 | mg/kg | 12.13.19 14.57 | U | 1 |
| Total BTEX | | <0.00198 | 0.00198 | mg/kg | 12.13.19 14.57 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 12.13.19 14.57 | |
| 4-Bromofluorobenzene | 460-00-4 | 128 | % | 70-130 | 12.13.19 14.57 | |

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH05B** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-009 | Date Collected: | 12.12.19 14.45 | Sample Depth: | 8 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 11.02 | Basis: | Wet Weight |
| Seq Number: | 3110529 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **120** | 10.1 | mg/kg | 12.13.19 14.54 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.13.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3110481 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 12.13.19 13.30 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 12.13.19 13.30 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 12.13.19 13.30 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 12.13.19 13.30 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 12.13.19 13.30 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 108 | % | 70-135 | 12.13.19 13.30 | |
| o-Terphenyl | 84-15-1 | 112 | % | 70-135 | 12.13.19 13.30 | |

# Certificate of Analytical Results 646243

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **PH05B** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646243-009 | Date Collected: | 12.12.19 14.45 | Sample Depth: | 8 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 10.06 | Basis: | Wet Weight |
| Seq Number: | 3110527 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 12.13.19 15.16 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 12.13.19 15.16 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 12.13.19 15.16 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 12.13.19 15.16 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 12.13.19 15.16 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 12.13.19 15.16 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 12.13.19 15.16 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 106 | % | 70-130 | 12.13.19 15.16 | |
| 4-Bromofluorobenzene | 460-00-4 | 125 | % | 70-130 | 12.13.19 15.16 | |

# 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 646243

## LT Environmental, Inc.

PLU BS II Federal Battery

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3110529 Matrix: Solid Date Prep: 12.13.19
MB Sample Id: 7692368-1-BLK LCS Sample Id: 7692368-1-BKS LCSD Sample Id: 7692368-1-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 | 262 | 105 | 90-110 | 1 | 20 | mg/kg | 12.13.19 13:34 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3110529 Matrix: Soil Date Prep: 12.13.19
Parent Sample Id: 646243-001 MS Sample Id: 646243-001 S MSD Sample Id: 646243-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 79.8 | 200 | 295 | 108 | 297 | 108 | 90-110 | 1 | 20 | mg/kg | 12.13.19 13:51 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3110529 Matrix: Soil Date Prep: 12.13.19
Parent Sample Id: 646256-002 MS Sample Id: 646256-002 S MSD Sample Id: 646256-002 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 3.93 | 199 | 213 | 105 | 220 | 109 | 90-110 | 3 | 20 | mg/kg | 12.13.19 15:12 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3110481 Matrix: Solid Date Prep: 12.13.19
MB Sample Id: 7692406-1-BLK LCS Sample Id: 7692406-1-BKS LCSD Sample Id: 7692406-1-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 | 1210 | 121 | 1010 | 101 | 70-135 | 18 | 35 | mg/kg | 12.13.19 11:30 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 1240 | 124 | 1050 | 105 | 70-135 | 17 | 35 | mg/kg | 12.13.19 11:30 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 105 | | 132 | | 123 | | 70-135 | % | 12.13.19 11:30 |
| o-Terphenyl | 107 | | 133 | | 122 | | 70-135 | % | 12.13.19 11:30 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3110481 Matrix: Solid Date Prep: 12.13.19
MB Sample Id: 7692406-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 12.13.19 11:10 | |

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 646243

## LT Environmental, Inc.

PLU BS II Federal Battery

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3110481 Matrix: Soil Date Prep: 12.13.19
Parent Sample Id: 646243-001 MS Sample Id: 646243-001 S MSD Sample Id: 646243-001 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 | 996 | 1090 | 109 | 1080 | 108 | 70-135 | 1 | 35 | mg/kg | 12.13.19 11:50 | |
| Diesel Range Organics (DRO) | <49.8 | 996 | 1120 | 112 | 1100 | 110 | 70-135 | 2 | 35 | mg/kg | 12.13.19 11:50 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 128 | | 129 | | 70-135 | % | 12.13.19 11:50 |
| o-Terphenyl | 123 | | 124 | | 70-135 | % | 12.13.19 11:50 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3110527 Matrix: Solid Date Prep: 12.13.19
MB Sample Id: 7692369-1-BLK LCS Sample Id: 7692369-1-BKS LCSD Sample Id: 7692369-1-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 | 0.0897 | 90 | 0.0913 | 91 | 70-130 | 2 | 35 | mg/kg | 12.13.19 11:01 | |
| Toluene | <0.00200 | 0.100 | 0.0913 | 91 | 0.0929 | 93 | 70-130 | 2 | 35 | mg/kg | 12.13.19 11:01 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0905 | 91 | 0.0923 | 92 | 71-129 | 2 | 35 | mg/kg | 12.13.19 11:01 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.192 | 96 | 0.196 | 98 | 70-135 | 2 | 35 | mg/kg | 12.13.19 11:01 | |
| o-Xylene | <0.00200 | 0.100 | 0.0964 | 96 | 0.0985 | 99 | 71-133 | 2 | 35 | mg/kg | 12.13.19 11:01 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 101 | | 102 | | 102 | | 70-130 | % | 12.13.19 11:01 |
| 4-Bromofluorobenzene | 110 | | 116 | | 117 | | 70-130 | % | 12.13.19 11:01 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3110527 Matrix: Soil Date Prep: 12.13.19
Parent Sample Id: 646243-001 MS Sample Id: 646243-001 S MSD Sample Id: 646243-001 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 | 0.0894 | 89 | 70-130 | 1 | 35 | mg/kg | 12.13.19 11:40 | |
| Toluene | <0.00200 | 0.100 | 0.0903 | 90 | 0.0892 | 88 | 70-130 | 1 | 35 | mg/kg | 12.13.19 11:40 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0865 | 87 | 0.0837 | 83 | 71-129 | 3 | 35 | mg/kg | 12.13.19 11:40 | |
| m,p-Xylenes | <0.00401 | 0.200 | 0.182 | 91 | 0.176 | 88 | 70-135 | 3 | 35 | mg/kg | 12.13.19 11:40 | |
| o-Xylene | <0.00200 | 0.100 | 0.0927 | 93 | 0.0900 | 89 | 71-133 | 3 | 35 | mg/kg | 12.13.19 11:40 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 104 | | 105 | | 70-130 | % | 12.13.19 11:40 |
| 4-Bromofluorobenzene | 123 | | 123 | | 70-130 | % | 12.13.19 11:40 |

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

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

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

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

# Chain of Custody

Work Order No: 646243

XENCO LABORATORIES

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

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Dan Moir | Bill to: (if different) | Kyle Littrell |
| Company Name: | LT Environmental, Inc., Permian office | Company Name: | XTO Energy |
| Address: | 3300 North A Street | Address: | 3104 East Green Street |
| City, State ZIP: | Midland, TX 79705 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | (432) 236-3849 | Email: | slo@ltenv.com, dmoir@ltenv.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | PLU BS 11 Federal Battery | Turn Around | |
| Project Number: | 012918036 | Routine | ☐ |
| P.O. Number: | | Rush: | 24H |
| Sampler's Name: | Spencer Lo | Due Date: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Temperature (°C): | 2.2 | Thermometer ID | |
| Received Intact: | (Yes) No | T-NM-007 | |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: | |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | 9 |

**ANALYSIS REQUEST**

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| PH03 | S | 12.12.19 | 1220 | 2 | 1 | X | X | X |
| PH03A | | | 1240 | 5 | | | | |
| PH03B | | | 1300 | 8 | | | | |
| PH04 | | | 1325 | 2 | | | | |
| PH04A | | | 1345 | 5 | | | | |
| PH04B | | | 1400 | 8 | | | | |
| PH05 | | | 1420 | 2 | | | | |
| PH05A | | | 1435 | 5 | | | | |
| PH05B | | | 1445 | 8 | | | | |

**Work Order Notes**

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

**Sample Comments**

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



| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|---|
| 1 | | | 0850 12/13/19 | 2 | | | 12/13/19 0905 |
| 3 | | | | 4 | | | |
| 5 | | | | 6 | | | |

Revised Date 051418 Rev. 2018.1

Final 1.000

Page 28 of 29

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

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 12/13/2019 09:05:00 AM

**Work Order #:** 646243

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

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

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | 2.2 |
| #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: 12/13/2019

**Checklist reviewed by:** Jessica Kramer Date: 12/13/2019

# Analytical Report 646256

## for

## LT Environmental, Inc.

**Project Manager: Dan Moir**

**PLU BS II Federal Battery**

**012918036**

**16-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)

16-DEC-19

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

Reference: XENCO Report No(s): **646256**
**PLU BS II Federal Battery**
Project Address:

**Dan Moir**:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 646256. 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. 646256 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 646256

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| SW16 | S | 12-12-19 11:15 | 0 - 6 ft | 646256-001 |
| SW17 | S | 12-12-19 11:15 | 0 - 6 ft | 646256-002 |
| SW18 | S | 12-12-19 11:15 | 0 - 6 ft | 646256-003 |

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3110527 BTEX by EPA 8021B

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

# Certificate of Analysis Summary 646256

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU BS II Federal Battery

**Project Id:** 012918036
**Contact:** Dan Moir
**Project Location:**

**Date Received in Lab:** Fri Dec-13-19 09:05 am
**Report Date:** 16-DEC-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 646256-001 | | 646256-002 | | 646256-003 | | | | |
| | ***Field Id:*** | SW16 | | SW17 | | SW18 | | | | |
| | ***Depth:*** | 0-6 ft | | 0-6 ft | | 0-6 ft | | | | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | | | |
| | ***Sampled:*** | Dec-12-19 11:15 | | Dec-12-19 11:15 | | Dec-12-19 11:15 | | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Dec-13-19 10:06 | | Dec-13-19 10:06 | | Dec-13-19 10:06 | | | | |
| | ***Analyzed:*** | Dec-13-19 15:35 | | Dec-13-19 16:39 | | Dec-13-19 16:58 | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | |
| Benzene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | | | |
| Toluene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | | | |
| Ethylbenzene | | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | | | |
| m,p-Xylenes | | <0.00399 | 0.00399 | <0.00400 | 0.00400 | <0.00398 | 0.00398 | | | |
| o-Xylene | | 0.00201 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | | | |
| Total Xylenes | | 0.00201 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | | | |
| Total BTEX | | 0.00201 | 0.00200 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | | | |
| **Chloride by EPA 300** | ***Extracted:*** | Dec-13-19 11:02 | | Dec-13-19 11:02 | | Dec-13-19 11:02 | | | | |
| | ***Analyzed:*** | Dec-13-19 15:00 | | Dec-13-19 15:06 | | Dec-13-19 15:23 | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | |
| Chloride | | <9.98 | 9.98 | <9.94 | 9.94 | <9.92 | 9.92 | | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | Dec-13-19 11:30 | | Dec-13-19 11:30 | | Dec-13-19 11:30 | | | | |
| | ***Analyzed:*** | Dec-13-19 13:30 | | Dec-13-19 13:50 | | Dec-13-19 14:10 | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | |
| Gasoline Range Hydrocarbons (GRO) | | <50.0 | 50.0 | <50.2 | 50.2 | <50.1 | 50.1 | | | |
| Diesel Range Organics (DRO) | | 2060 | 50.0 | 685 | 50.2 | 741 | 50.1 | | | |
| Motor Oil Range Hydrocarbons (MRO) | | 211 | 50.0 | 122 | 50.2 | 81.5 | 50.1 | | | |
| Total GRO-DRO | | 2060 | 50.0 | 685 | 50.2 | 741 | 50.1 | | | |
| Total TPH | | 2270 | 50.0 | 807 | 50.2 | 823 | 50.1 | | | |





Jessica Kramer
Project Assistant

# Certificate of Analytical Results 646256

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW16** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646256-001 | Date Collected: | 12.12.19 11.15 | Sample Depth: | 0 - 6 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 11.02 | Basis: | Wet Weight |
| Seq Number: | 3110529 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.98 | 9.98 | mg/kg | 12.13.19 15.00 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.13.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3110481 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 12.13.19 13.30 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **2060** | 50.0 | mg/kg | 12.13.19 13.30 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **211** | 50.0 | mg/kg | 12.13.19 13.30 | | 1 |
| **Total GRO-DRO** | PHC628 | **2060** | 50.0 | mg/kg | 12.13.19 13.30 | | 1 |
| **Total TPH** | PHC635 | **2270** | 50.0 | mg/kg | 12.13.19 13.30 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 116 | % | 70-135 | 12.13.19 13.30 | |
| o-Terphenyl | 84-15-1 | 122 | % | 70-135 | 12.13.19 13.30 | |

# Certificate of Analytical Results 646256

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW16** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646256-001 | Date Collected: | 12.12.19 11.15 | Sample Depth: | 0 - 6 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 10.06 | Basis: | Wet Weight |
| Seq Number: | 3110527 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.13.19 15.35 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.13.19 15.35 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.13.19 15.35 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 12.13.19 15.35 | U | 1 |
| **o-Xylene** | 95-47-6 | **0.00201** | 0.00200 | mg/kg | 12.13.19 15.35 | | 1 |
| **Total Xylenes** | 1330-20-7 | **0.00201** | 0.00200 | mg/kg | 12.13.19 15.35 | | 1 |
| **Total BTEX** | | **0.00201** | 0.00200 | mg/kg | 12.13.19 15.35 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 105 | % | 70-130 | 12.13.19 15.35 | |
| 4-Bromofluorobenzene | 460-00-4 | 113 | % | 70-130 | 12.13.19 15.35 | |

# Certificate of Analytical Results 646256

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW17** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646256-002 | Date Collected: | 12.12.19 11.15 | Sample Depth: | 0 - 6 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 11.02 | Basis: | Wet Weight |
| Seq Number: | 3110529 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.94 | 9.94 | mg/kg | 12.13.19 15.06 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.13.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3110481 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 12.13.19 13.50 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **685** | 50.2 | mg/kg | 12.13.19 13.50 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **122** | 50.2 | mg/kg | 12.13.19 13.50 | | 1 |
| **Total GRO-DRO** | PHC628 | **685** | 50.2 | mg/kg | 12.13.19 13.50 | | 1 |
| **Total TPH** | PHC635 | **807** | 50.2 | mg/kg | 12.13.19 13.50 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 108 | % | 70-135 | 12.13.19 13.50 | |
| o-Terphenyl | 84-15-1 | 114 | % | 70-135 | 12.13.19 13.50 | |

# Certificate of Analytical Results 646256

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW17** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646256-002 | Date Collected: | 12.12.19 11.15 | Sample Depth: | 0 - 6 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 10.06 | Basis: | Wet Weight |
| Seq Number: | 3110527 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 12.13.19 16.39 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 12.13.19 16.39 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 12.13.19 16.39 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00400 | 0.00400 | mg/kg | 12.13.19 16.39 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 12.13.19 16.39 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 12.13.19 16.39 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 12.13.19 16.39 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 12.13.19 16.39 | |
| 4-Bromofluorobenzene | 460-00-4 | 105 | % | 70-130 | 12.13.19 16.39 | |

# Certificate of Analytical Results 646256

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW18** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646256-003 | Date Collected: | 12.12.19 11.15 | Sample Depth: | 0 - 6 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 11.02 | Basis: | Wet Weight |
| Seq Number: | 3110529 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <9.92 | 9.92 | mg/kg | 12.13.19 15.23 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 12.13.19 11.30 | Basis: | Wet Weight |
| Seq Number: | 3110481 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 12.13.19 14.10 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **741** | 50.1 | mg/kg | 12.13.19 14.10 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **81.5** | 50.1 | mg/kg | 12.13.19 14.10 | | 1 |
| **Total GRO-DRO** | PHC628 | **741** | 50.1 | mg/kg | 12.13.19 14.10 | | 1 |
| **Total TPH** | PHC635 | **823** | 50.1 | mg/kg | 12.13.19 14.10 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 118 | % | 70-135 | 12.13.19 14.10 | |
| o-Terphenyl | 84-15-1 | 126 | % | 70-135 | 12.13.19 14.10 | |

# Certificate of Analytical Results 646256

## LT Environmental, Inc., Arvada, CO

PLU BS II Federal Battery

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW18** | Matrix: | Soil | Date Received: | 12.13.19 09.05 |
| Lab Sample Id: | 646256-003 | Date Collected: | 12.12.19 11.15 | Sample Depth: | 0 - 6 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 12.13.19 10.06 | Basis: | Wet Weight |
| Seq Number: | 3110527 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 12.13.19 16.58 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 12.13.19 16.58 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 12.13.19 16.58 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 12.13.19 16.58 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 12.13.19 16.58 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 12.13.19 16.58 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 12.13.19 16.58 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 121 | % | 70-130 | 12.13.19 16.58 | |
| 1,4-Difluorobenzene | 540-36-3 | 101 | % | 70-130 | 12.13.19 16.58 | |

# 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 646256

## LT Environmental, Inc.

PLU BS II Federal Battery

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3110529 Matrix: Solid Date Prep: 12.13.19
MB Sample Id: 7692368-1-BLK LCS Sample Id: 7692368-1-BKS LCSD Sample Id: 7692368-1-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 | 262 | 105 | 90-110 | 1 | 20 | mg/kg | 12.13.19 13:34 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3110529 Matrix: Soil Date Prep: 12.13.19
Parent Sample Id: 646243-001 MS Sample Id: 646243-001 S MSD Sample Id: 646243-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 79.8 | 200 | 295 | 108 | 297 | 108 | 90-110 | 1 | 20 | mg/kg | 12.13.19 13:51 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3110529 Matrix: Soil Date Prep: 12.13.19
Parent Sample Id: 646256-002 MS Sample Id: 646256-002 S MSD Sample Id: 646256-002 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 3.93 | 199 | 213 | 105 | 220 | 109 | 90-110 | 3 | 20 | mg/kg | 12.13.19 15:12 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3110481 Matrix: Solid Date Prep: 12.13.19
MB Sample Id: 7692406-1-BLK LCS Sample Id: 7692406-1-BKS LCSD Sample Id: 7692406-1-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 | 1210 | 121 | 1010 | 101 | 70-135 | 18 | 35 | mg/kg | 12.13.19 11:30 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 1240 | 124 | 1050 | 105 | 70-135 | 17 | 35 | mg/kg | 12.13.19 11:30 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 105 | | 132 | | 123 | | 70-135 | % | 12.13.19 11:30 |
| o-Terphenyl | 107 | | 133 | | 122 | | 70-135 | % | 12.13.19 11:30 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3110481 Matrix: Solid Date Prep: 12.13.19
MB Sample Id: 7692406-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 12.13.19 11:10 | |

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 646256

## LT Environmental, Inc.

PLU BS II Federal Battery

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3110481 Matrix: Soil Date Prep: 12.13.19
Parent Sample Id: 646243-001 MS Sample Id: 646243-001 S MSD Sample Id: 646243-001 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 | 996 | 1090 | 109 | 1080 | 108 | 70-135 | 1 | 35 | mg/kg | 12.13.19 11:50 | |
| Diesel Range Organics (DRO) | <49.8 | 996 | 1120 | 112 | 1100 | 110 | 70-135 | 2 | 35 | mg/kg | 12.13.19 11:50 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 128 | | 129 | | 70-135 | % | 12.13.19 11:50 |
| o-Terphenyl | 123 | | 124 | | 70-135 | % | 12.13.19 11:50 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3110527 Matrix: Solid Date Prep: 12.13.19
MB Sample Id: 7692369-1-BLK LCS Sample Id: 7692369-1-BKS LCSD Sample Id: 7692369-1-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 | 0.0897 | 90 | 0.0913 | 91 | 70-130 | 2 | 35 | mg/kg | 12.13.19 11:01 | |
| Toluene | <0.00200 | 0.100 | 0.0913 | 91 | 0.0929 | 93 | 70-130 | 2 | 35 | mg/kg | 12.13.19 11:01 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0905 | 91 | 0.0923 | 92 | 71-129 | 2 | 35 | mg/kg | 12.13.19 11:01 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.192 | 96 | 0.196 | 98 | 70-135 | 2 | 35 | mg/kg | 12.13.19 11:01 | |
| o-Xylene | <0.00200 | 0.100 | 0.0964 | 96 | 0.0985 | 99 | 71-133 | 2 | 35 | mg/kg | 12.13.19 11:01 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 101 | | 102 | | 102 | | 70-130 | % | 12.13.19 11:01 |
| 4-Bromofluorobenzene | 110 | | 116 | | 117 | | 70-130 | % | 12.13.19 11:01 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3110527 Matrix: Soil Date Prep: 12.13.19
Parent Sample Id: 646243-001 MS Sample Id: 646243-001 S MSD Sample Id: 646243-001 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 | 0.0894 | 89 | 70-130 | 1 | 35 | mg/kg | 12.13.19 11:40 | |
| Toluene | <0.00200 | 0.100 | 0.0903 | 90 | 0.0892 | 88 | 70-130 | 1 | 35 | mg/kg | 12.13.19 11:40 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0865 | 87 | 0.0837 | 83 | 71-129 | 3 | 35 | mg/kg | 12.13.19 11:40 | |
| m,p-Xylenes | <0.00401 | 0.200 | 0.182 | 91 | 0.176 | 88 | 70-135 | 3 | 35 | mg/kg | 12.13.19 11:40 | |
| o-Xylene | <0.00200 | 0.100 | 0.0927 | 93 | 0.0900 | 89 | 71-133 | 3 | 35 | mg/kg | 12.13.19 11:40 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 104 | | 105 | | 70-130 | % | 12.13.19 11:40 |
| 4-Bromofluorobenzene | 123 | | 123 | | 70-130 | % | 12.13.19 11:40 |

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
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

**Work Order No:** 624256

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Dan Moir | Bill to: (if different) | Kyle Littrell |
| Company Name: | LT Environmental, Inc., Permian office | Company Name: | XTO Energy |
| Address: | 3300 North A Street | Address: | 3104 East Green Street |
| City, State ZIP: | Midland, TX 79705 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | (432) 236-3849 | Email: | slo@ltenv.com, dmoir@ltenv.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | PLU BS 11 Federal Battery | Turn Around | |
| Project Number: | 012918036 | Routine ☐ | |
| P.O. Number: | | Rush: 24H | |
| Sampler's Name: | Spencer Lo | Due Date: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temperature (°C): | 2.2 | Temp Blank: (Yes) No | Wet Ice: (Yes) No |
| Received Intact: | (Yes) No | Thermometer ID | T-NM-007 |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No (N/A) | Total Containers: | 3 |

**ANALYSIS REQUEST**

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| SW16 | S | 12.12.19 | 1115 | 0-6 | 1 | X | X | X |
| SW17 | S | 12.12.19 | 1130 | 0-6 | 1 | X | X | X |
| SW18 | S | 12.12.19 | 1145 | 0-6 | 1 | X | X | X |

**Work Order Notes**

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

**Sample Comments**

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

*Circle Method(s) and Metal(s) to be analyzed* **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg



| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|---|
| 1 | Spencer Lo | Elliott Moir | 0850 12/13/19 | 2 | Elliott Moir | | 12/13/19 0905 |
| 3 | | | | 4 | | | |
| 5 | | | | 6 | | | |

Revised Date 051418 Rev. 2018.1



Final 1.000

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 12/13/2019 09:05:00 AM

**Work Order #:** 646256

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

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

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | 2.2 |
| #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: 12/13/2019

**Checklist reviewed by:** Jessica Kramer Date: 12/13/2019