

June 29, 2019

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

RE: Deferral Request
James Ranch Unit #138 Release at JRU 19 Battery
Remediation Permit Number 2RP-4980
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), is pleased to present the following report detailing excavation of impacted soil and confirmation soil sampling activities at the James Ranch Unit #138 release at JRU 19 Battery (Site) in Unit J, Section 36, Township 22 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the excavation and soil sampling activities was to address impacts to soil related to a release of produced water and crude oil at the Site.

On September 8, 2018, a failed check valve on the flow line header released approximately 667 barrels (bbls) of produced water and 194 bbls of crude oil at the entrance to the Site. The release impacted a total of approximately 73,800 square feet, with 48,450 square feet on the caliche well pad and 25,350 square feet in the pasture area south of the well pad. A vacuum truck was dispatched to the Site to recover the free-standing fluid; approximately 620 bbls of produced water and 180 bbls of crude oil were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on September 21, 2018, and was assigned Remediation Permit (RP) Number 2RP-4980 (Attachment 1). Based on the excavation activities and results of the soil sampling events, XTO is submitting this report, describing remediation that has occurred to-date and requesting deferral of final remediation.

BACKGROUND

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 (19.15.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is United States Geological Survey (USGS) well 322031103492801, located approximately 2,762 feet southeast of the Site, with a depth to groundwater of 409 feet bgs. The



total depth of the water well is not determined. Ground surface elevation at the water well location is approximately 3,315 feet above mean sea level, which is 4 feet higher in elevation than the Site. The nearest continuously flowing water or significant watercourse to the Site is an unnamed dry wash located approximately 7,559 feet south-southwest 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 medium potential karst area. Based on site-specific and regional data developed for the site characterization, the following NMOCD Table 1 Closure Criteria were applied: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 1,000 mg/kg total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO); 2,500 mg/kg TPH; and 20,000 mg/kg chloride. A Closure Criteria of 600 mg/kg chloride was applied to the undeveloped pasture area that was impacted by the release, per 19.15.29.13.D (1) NMAC for the top 4 feet of areas that will be reclaimed following remediation.

PRELIMINARY SOIL SAMPLING

During September and October 2018, an LTE scientist collected 11 preliminary soil samples (SS01 through SS11) within and around the release extent to assess the lateral extent of impacted soil. The soil sample locations, as depicted on Figure 2, were selected based on information provided on the initial Form C-141 and field observations. To eliminate the effects from weathering and natural degradation of contaminants at the ground surface, soil samples were collected from each sample location from a depth of approximately 0.5 feet bgs. The soil samples were screened for volatile aromatic hydrocarbons and chlorides using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. 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 to Xenco Laboratories (Xenco) in Midland, Texas at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B, TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D, and chloride following EPA Method 300.0.

Laboratory analytical results indicated GRO/DRO concentrations exceeded the NMOCD Table 1 Closure Criteria in preliminary soil sample SS09. Laboratory analytical results indicated chloride concentrations exceeded the NMOCD Table 1 Closure Criteria in preliminary soil samples SS04 and SS07. Laboratory analytical results are presented on Figure 2 and summarized in Table 1. The laboratory analytical report is included in Attachment 2.



EXCAVATION ACTIVITIES

Based on the soil sample analytical results, excavation of impacted soil was required. During October 2018, May 2019, and June 2019, an LTE scientist returned to the Site to oversee excavation of impacted soil and potholing, which occurred simultaneously. To delineate impacts to soil and direct excavation activities, LTE screened soil utilizing a PID and Hach® chloride QuanTab® test strips. Impacted soil was excavated from the release area to depths ranging from approximately 1 foot to 15 feet bgs. Due to the presence of dense process equipment and pipelines, impacted soil was excavated via hydro-excavation to the maximum extent practicable (MEP) where other mechanical methods were not feasible. As a result, a total of nine separate excavations were completed. Following removal of impacted soil to the MEP, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of each excavation. The 5-point composite soil samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. All excavation soil samples were collected, handled, and analyzed as described above and submitted to Xenco Laboratories in Midland, Texas.

The entire Site and all excavations are divided into three sections (Excavation Areas 1 through 3). All excavation soil sample locations and the horizontal extents of the excavations are presented on Figure 3. Approximately 4,775 cubic yards of impacted soil were removed from the excavations. The impacted soil was transported to and properly disposed of at Lea Land landfill facility in Hobbs, New Mexico.

Excavation Soil Sample Locations – Area 1:

Excavation Area 1 encompasses the northern portion of the well pad. Due to the proximity of pipelines and active process equipment, a total of 5 separate excavations were completed in this area (Excavation Areas 1A through 1E). The excavation soil sample locations and the horizontal extents of the excavations are presented on Figure 4.

Excavation Area 1A measured approximately 120 square feet in area with a depth of approximately 0.5 feet bgs. Composite soil sample FS27 was collected from the floor of the excavation at a depth of approximately 0.5 feet bgs. Based on the shallow configuration of the excavation, FS27 is representative of the sidewalls and floor of the excavation.

Excavation Area 1B measured approximately 270 square feet in area with a depth of approximately 1 feet bgs. Composite soil samples FS28 and FS29 were collected from the floor of the excavation at a depth of 1-foot bgs. Based on the shallow configuration of the excavation, FS28 and FS29 are representative of the sidewalls and floor of the excavation.

Excavation Area 1C measured approximately 160 square feet in area with depths ranging from approximately 2 feet bgs on the outer edges to approximately 4 feet bgs in the middle.



Composite soil samples SW05 through SW07 were collected from the sidewalls of the excavation from an average depth of 2 feet bgs. Composite soil sample FS04 was collected from the floor of the excavation at a depth of approximately 4 feet bgs.

Excavation Area 1D measured approximately 3,150 square feet in area with depths ranging from approximately 1-foot bgs in the northern portion to approximately 4 feet bgs in the southern portion. Composite soil sample SW08 was collected from the sidewalls of the excavation from an average depth of 2 feet bgs. Composite soil samples FS03 and FS11 were collected from the floor of the excavation at depths ranging from approximately 1 foot to 4 feet bgs.

Excavation Area 1E measured approximately 280 square feet in area with depths ranging from approximately 2 feet bgs in the southern portion to approximately 3 feet bgs in the northern portion. Composite soil samples SW01 through SW04 were collected from the sidewalls of the excavation from depths ranging from approximately 2 feet to 3 feet bgs. Composite soil sample FS01 was collected from the floor of the excavation at a depth of approximately 4 feet bgs.

Excavation Soil Sample Locations – Area 2:

Excavation Area 2 encompasses the central portion of the well pad. Due to the proximity of pipelines and active process equipment, two separate excavations were completed in this area (Excavation Areas 2A and 2B). The excavation soil sample locations and the horizontal extents of the excavations are presented on Figure 5.

Excavation Area 2A measured approximately 5,600 square feet in area with a depth of approximately 15 feet bgs. Composite soil samples SW13 through SW35 were collected from the sidewalls of the excavation from an average depth of 4 feet bgs. Composite soil samples FS12 through FS17 and FS20 through FS26 were collected from the floor of the excavation at depths ranging from approximately 1.5 feet bgs to 15 feet bgs.

Excavation Area 2B measured approximately 210 square feet in area with a depth of approximately 2 feet bgs. Composite soil sample SW16 was collected from the sidewalls of the excavation at an average depth of 2 feet bgs. Composite soil sample FS19 was collected from the floor of the excavation at a depth of approximately 2 feet bgs.

Excavation Soil Sample Locations – Area 3:

Excavation Area 3 encompasses the affected areas in the pasture to the south of the well pad. Due to the proximity of pipelines and active process equipment, two separate excavations were completed in this area (Excavation Areas 3A and 3B). A sample variance request was submitted by LTE on April 11, 2019 proposing to sample the excavation offsite by collecting 5-point composite samples representing every 1,000 square feet. The variance was approved by





NMOCD on April 29, 2019. The excavation soil sample locations and the horizontal extents of the excavations are presented on Figure 6.

Excavation Area 3A measured approximately 2,840 square feet in area with a depth of approximately 4.5 feet bgs in the western portion and a depth of approximately 5.5 feet bgs in the eastern portion. Composite soil samples SW09 and SW10 were collected from the sidewalls of the excavation at depths ranging from the surface to approximately 5.5 feet bgs. Composite soil samples FS04 through FS06 were collected from the floor of the excavation at depths of approximately 4.5 feet bgs to 5.5 feet bgs, respectively.

Excavation Area 3B measured approximately 3,660 square feet in area with an average depth of 5 feet bgs in the northern portion to approximately 8 feet bgs in the southern portion. Composite soil samples SW11 and SW12 were collected from the sidewalls of the excavation at depths ranging from the surface to approximately 8 feet bgs. Composite soil samples FS07 through FS10 were collected from the floor of the excavation at depths ranging from approximately 4.5 feet bgs to 8 feet bgs.

DELINEATION SOIL SAMPLING ACTIVITIES

During September 2018, October 2018, May 2018, and June 2019, LTE personnel returned to the Site to oversee potholing activities to delineate the lateral and vertical extent of impacted soil in and around the release extent. Potholes were advanced via hydro-vacuum and track hoe to depths ranging from approximately 0.5 feet to 16 feet bgs. Soil was field screened utilizing a PID and Hach® chloride QuanTab® test strips. Two delineation soil samples were collected for laboratory analysis from potholes PH01 through PH05, PH07 through PH21, and PH23 through PH38. Three delineation soil samples were collected from pothole PH22. Potholes PH01 through PH05 and PH07 through PH38 were collected at depths ranging from approximately 0.5 feet to 4 feet bgs. Potholes PH01A through PH05A and PH07A through PH38A were collected at depths ranging from approximately 1-foot to 16 feet bgs. Pothole PH022B was collected at a depth of approximately 4.5 feet bgs. The delineation soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Midland, Texas. The delineation soil sample locations and depths are presented on Figure 7. Soil sample logs are included as Attachment 3.

Laboratory analytical results indicated BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with applicable NMOCD Table 1 Closure Criteria in pothole soil samples PH01 through PH07, PH10 through PH19, PH23 through PH38, PH01A through PH21A, PH23A through PH38A, and PH22B. Laboratory analytical results indicated GRO/DRO, TPH, and/or chloride concentrations exceeded applicable NMOCD Table 1 Closure Criteria in pothole soil samples PH08, PH09, PH20 through PH22, and PH22A. Excavation in these areas could not be completed due to the proximity of process equipment and active pipelines.





Contaminants in the areas of potholes with concentrations exceeding applicable NMOCD Table 1 Closure Criteria have been delineated horizontally by preliminary soil sample SS01 and pothole soil samples PH01 through PH07, PH10 through PH19, and PH23 through PH38. Laboratory analytical results are presented on Figure 7 and summarized in Table 1. The laboratory analytical reports are included in Attachment 2.

ANALYTICAL RESULTS

Laboratory analytical results from each of the excavation areas are presented below. Where impacted soil could not be removed due to presence of active pipelines and process equipment, analytical results from delineation sample points are described. Laboratory analytical results are summarized in Table 1, and the complete laboratory analytical reports are included in Attachment 2.

Excavation Soil Sample Locations – Area 1:

Laboratory analytical results for all excavation samples collected in Excavation Area 1 were compliant with NMOCD Table 1 Closure Criteria except FS27 in Area 1A. Depth of impacted soil in Area 1A was delineated by PH22B at 4.5 feet bgs. Lateral extent is delineated by PH22, PH23, PH 34, and PH38.

Excavation Soil Sample Locations – Area 2:

Initial sidewall samples SW30, SW29, SW24, and SW31 failed NMOCD Table 1 Closure Criteria, but soil represented by these samples was removed and sidewalls were extended. Laboratory analytical results for excavation samples collected in Excavation Area 2 were compliant with NMOCD Table 1 Closure Criteria except SW22, SW27, SW28, and SW32. Remaining impacted soil is delineated vertically to 16 feet bgs by PH36 and laterally by laterally by pothole soil samples PH05, PH07, PH13, PH14, PH11, PH18, PH35, and PH37.

Excavation Soil Sample Locations – Area 3:

Laboratory analytical results for all excavation samples collected in Excavation Area e were compliant with NMOCD Table 1 Closure Criteria.

DEFERRAL REQUEST

Approximately 4,775 cubic yards of impacted soil were excavated from the Site, including all impacted soil in the pasture south of the Site. Removal of impacted soil to the MEP on pad was conducted using hydro-excavation and a track hoe. Residual impacted soil was left in place on the well pad for compliance with the XTO safety policy regarding earth-moving activities within 2-feet of active production equipment and pipelines. Laboratory analytical results for excavation soil sample FS27 collected from the floor of Excavation Area 1A and excavation soil sample SW22,





SW23, SW27, SW28, and SW32 collected from the sidewalls of Excavation Area 2A, indicated soil exhibiting GRO/DRO and/or TPH concentrations exceeding applicable NMOCD Table 1 Closure Criteria was left in place within 2 feet of active production equipment or pipelines.

An estimated 300 cubic yards of impacted soil remain in place in the northeast portion of the well pad, in the vicinity of Excavation Area 1A, assuming a maximum depth of 4.5 feet based on pothole soil sample PH22B, which was compliant with the NMOCD Table 1 Closure Criteria. The impacted soil remaining in place is delineated vertically by pothole soil sample PH22B, and laterally by preliminary soil sample SS01 and pothole soil samples PH22, PH23, PH34, and PH38.

An estimated 1,000 cubic yards of impacted soil remain in place in the central portion of the well pad, in the vicinity of Excavation Area 2A, assuming a maximum depth of 16 feet based on pothole soil sample PH36A, which was compliant with the NMOCD Table 1 Closure Criteria. The impacted soil remaining in place is delineated vertically by pothole soil samples PH36A, and laterally by pothole soil samples PH05, PH07, PH13, PH14, PH11, PH18, PH35, and PH37.

XTO requests to backfill the existing excavations and complete remediation during any major future well pad construction/alteration or final plugging and abandonment, whichever occurs first. LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. Free-standing fluids were recovered during initial response activities, and no saturated soil remains in place. Residual impact is characterized by TPH concentrations ranging from 2,610 mg/kg to 4,810 mg/kg and all chloride concentrations exceeding NMOCD Table 1 Closure Criteria have been removed. XTO requests deferral of final remediation for RP Number 2RP-4980. Upon approval of this deferral request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing conditions. An updated NMOCD Form C-141 is included in Attachment 1. A photographic log of the Site is included in Attachment 4.

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

Sincerely,

LT ENVIRONMENTAL, INC.

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

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO Energy, Inc.





Michael Bratcher, NMOCD
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD
Ryan Mann, State Land Office

Attachments:

Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Excavation Soil Sample Locations
Figure 4	Excavation Soil Sample Locations – Area 1
Figure 5	Excavation Soil Sample Locations – Area 2
Figure 6	Excavation Soil Sample Locations – Area 3
Figure 7	Delineation Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Initial/Final NMOCD Form C-141 (2RP-4980)
Attachment 2	Laboratory Analytical Reports
Attachment 3	Soil Sample Logs
Attachment 4	Photographic Log







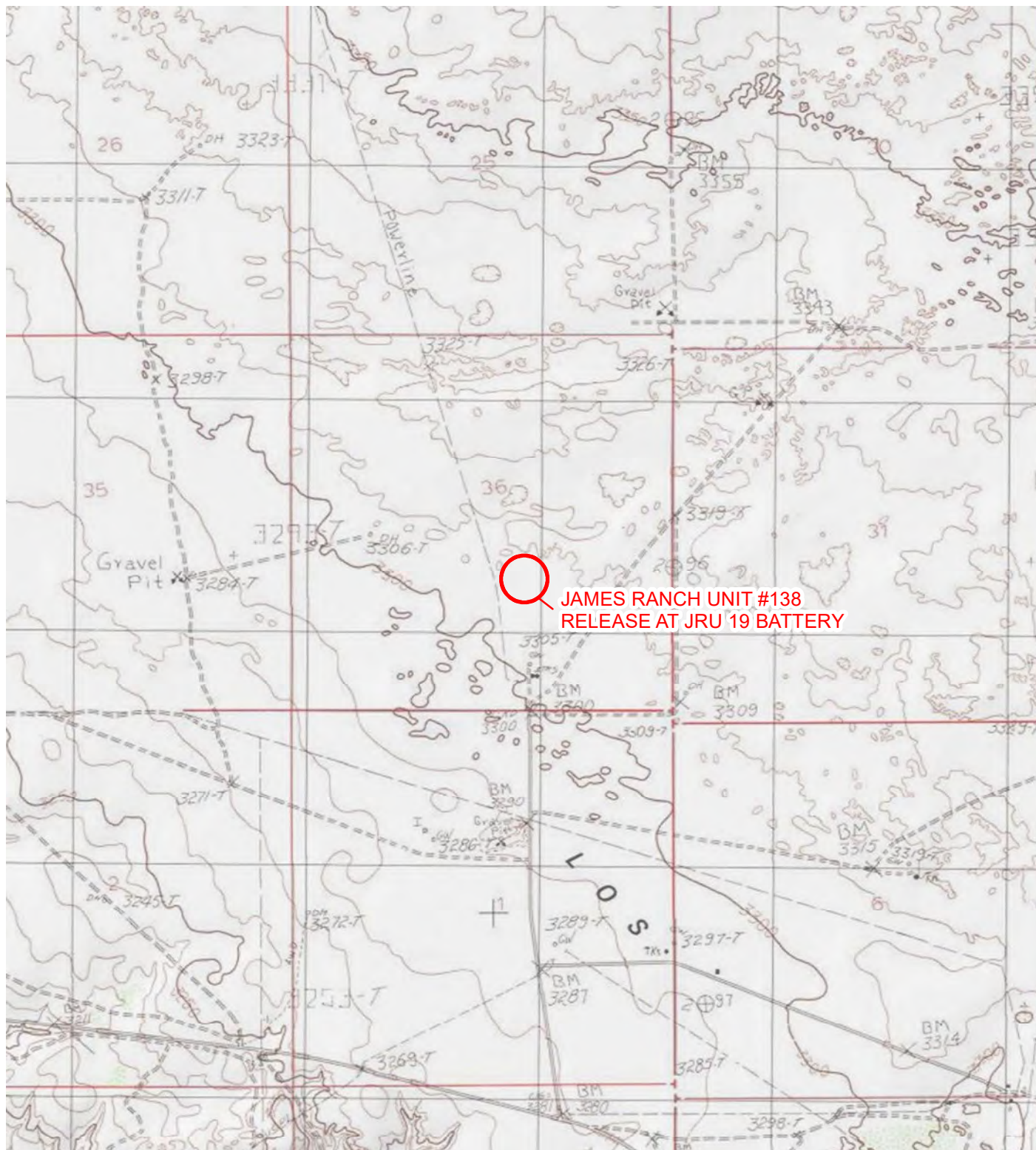
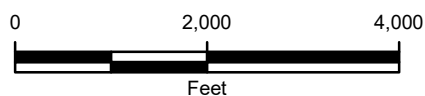


IMAGE COURTESY OF ESRI/USGS

LEGEND

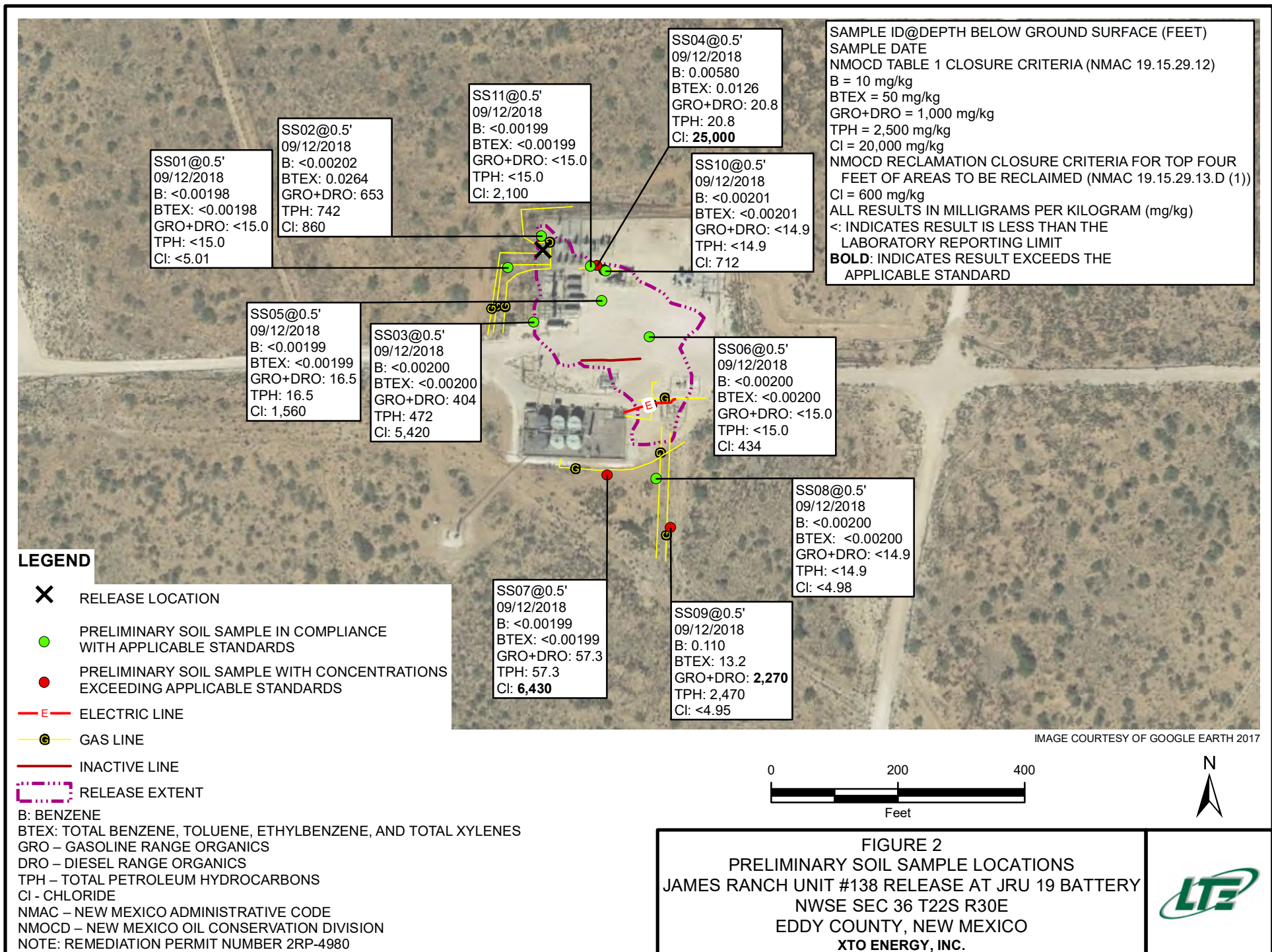
○ SITE LOCATION



NOTE: REMEDIATION
PERMIT NUMBER
2RP-4980

FIGURE 1
SITE LOCATION MAP
JAMES RANCH UNIT #138 RELEASE AT JRU 19 BATTERY
UNIT J SEC 36 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.





SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
 SAMPLE DATE
 NMOCD TABLE 1 CLOSURE CRITERIA (NMAC 19.15.29.12)
 B = 10 mg/kg
 BTEX = 50 mg/kg
 GRO+DRO = 1,000 mg/kg
 TPH = 2,500 mg/kg
 Cl = 20,000 mg/kg
 NMOCD RECLAMATION CLOSURE CRITERIA FOR TOP FOUR FEET OF AREAS TO BE RECLAIMED (NMAC 19.15.29.13.D (1))
 Cl = 600 mg/kg
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE LABORATORY REPORTING LIMIT
BOLD: INDICATES RESULT EXCEEDS THE APPLICABLE STANDARD

SS01@0.5'
 09/12/2018
 B: <0.00198
 BTEX: <0.00198
 GRO+DRO: <15.0
 TPH: <15.0
 Cl: <5.01

SS02@0.5'
 09/12/2018
 B: <0.00202
 BTEX: 0.0264
 GRO+DRO: 653
 TPH: 742
 Cl: 860

SS11@0.5'
 09/12/2018
 B: <0.00199
 BTEX: <0.00199
 GRO+DRO: <15.0
 TPH: <15.0
 Cl: 2,100

SS04@0.5'
 09/12/2018
 B: 0.00580
 BTEX: 0.0126
 GRO+DRO: 20.8
 TPH: 20.8
 Cl: **25,000**

SS10@0.5'
 09/12/2018
 B: <0.00201
 BTEX: <0.00201
 GRO+DRO: <14.9
 TPH: <14.9
 Cl: 712

SS05@0.5'
 09/12/2018
 B: <0.00199
 BTEX: <0.00199
 GRO+DRO: 16.5
 TPH: 16.5
 Cl: 1,560

SS03@0.5'
 09/12/2018
 B: <0.00200
 BTEX: <0.00200
 GRO+DRO: 404
 TPH: 472
 Cl: 5,420

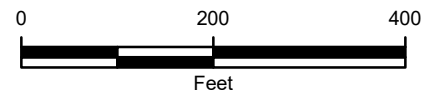
SS06@0.5'
 09/12/2018
 B: <0.00200
 BTEX: <0.00200
 GRO+DRO: <15.0
 TPH: <15.0
 Cl: 434

SS07@0.5'
 09/12/2018
 B: <0.00199
 BTEX: <0.00199
 GRO+DRO: 57.3
 TPH: 57.3
 Cl: **6,430**

SS09@0.5'
 09/12/2018
 B: 0.110
 BTEX: 13.2
 GRO+DRO: **2,270**
 TPH: 2,470
 Cl: <4.95

SS08@0.5'
 09/12/2018
 B: <0.00200
 BTEX: <0.00200
 GRO+DRO: <14.9
 TPH: <14.9
 Cl: <4.98

IMAGE COURTESY OF GOOGLE EARTH 2017



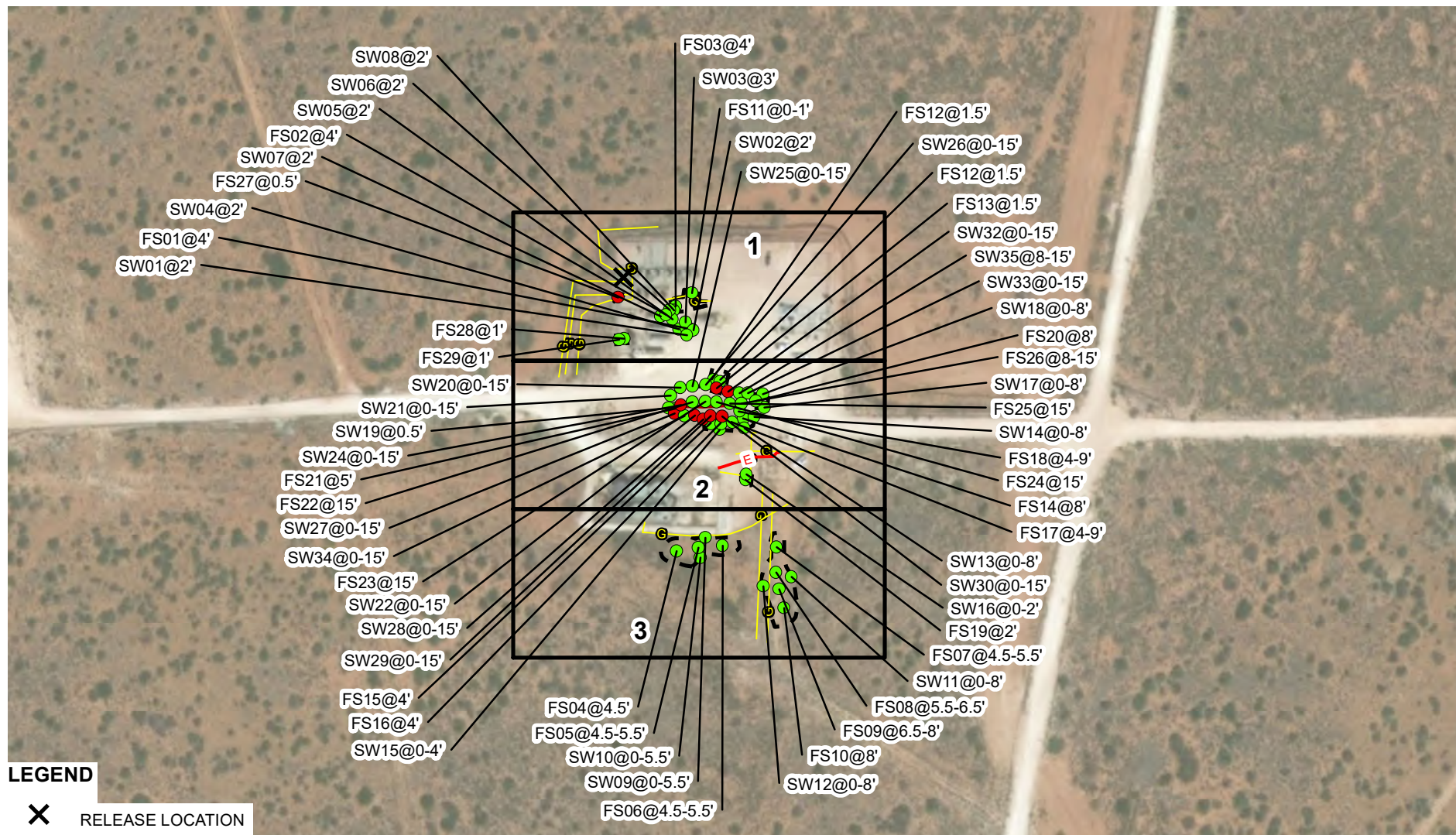


IMAGE COURTESY OF ESRI

LEGEND

- ✕ RELEASE LOCATION
 - EXCAVATION SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS
 - EXCAVATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS
 - E — ELECTRIC LINE
 - G — GAS LINE
 - — — INACTIVE LINE
 - EXCAVATION EXTENT
- SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
NOTE: REMEDIATION PERMIT NUMBER 2RP-4980

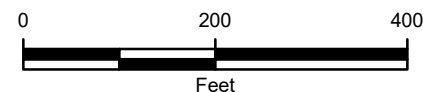
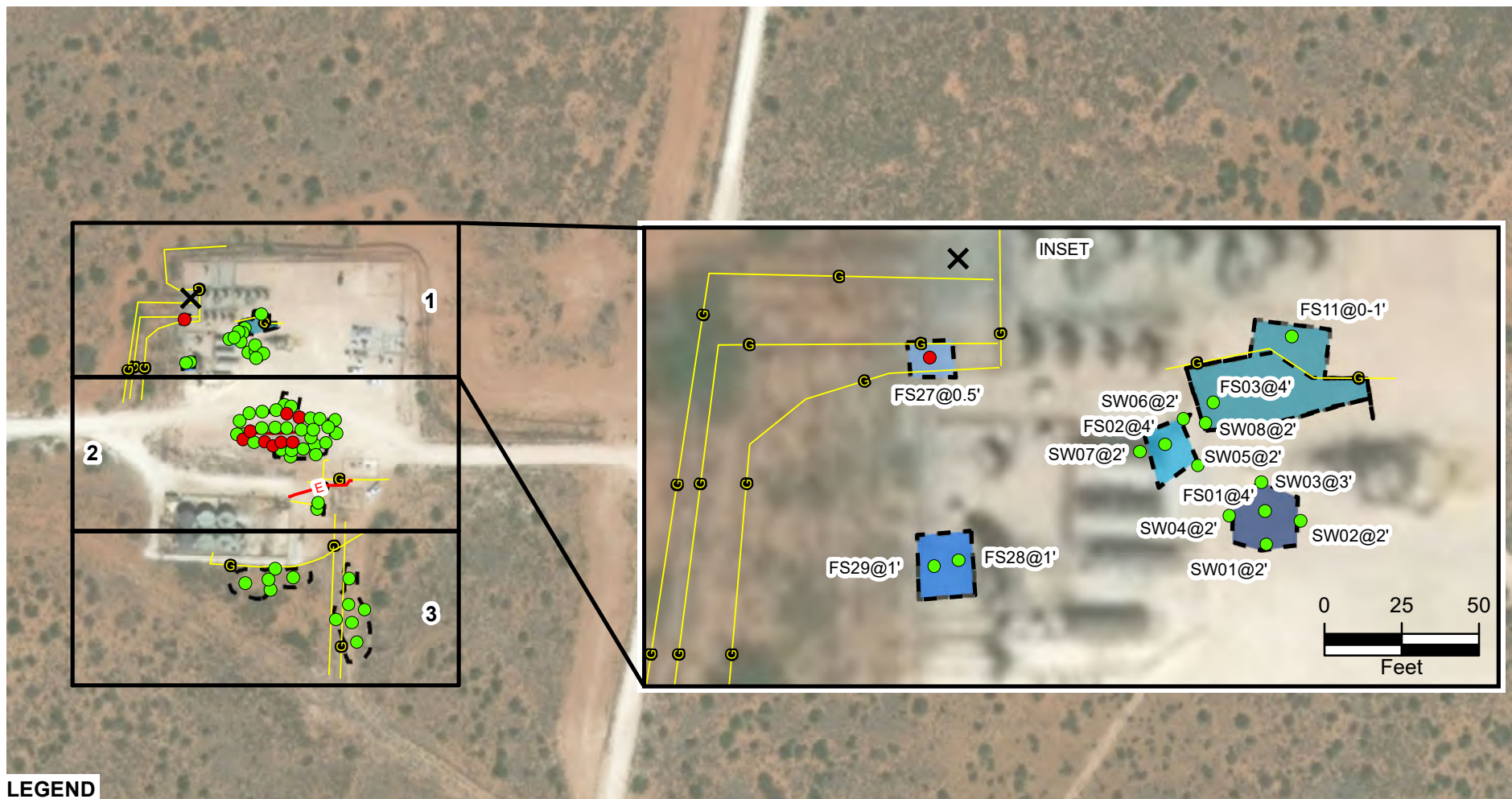


FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT #138 RELEASE AT JRU 19 BATTERY
NWSE SEC 36 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.





LEGEND

- X** RELEASE LOCATION
- EXCAVATION SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS
- EXCAVATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS
- E** ELECTRIC LINE
- G** GAS LINE
- INACTIVE LINE
- - -** EXCAVATION EXTENT

- EXCAVATION AREA 1A
- EXCAVATION AREA 1B
- EXCAVATION AREA 1C
- EXCAVATION AREA 1D
- EXCAVATION AREA 1E

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
NOTE: REMEDIATION PERMIT NUMBER 2RP-4980

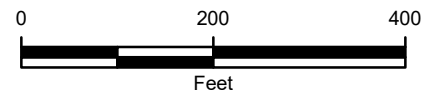
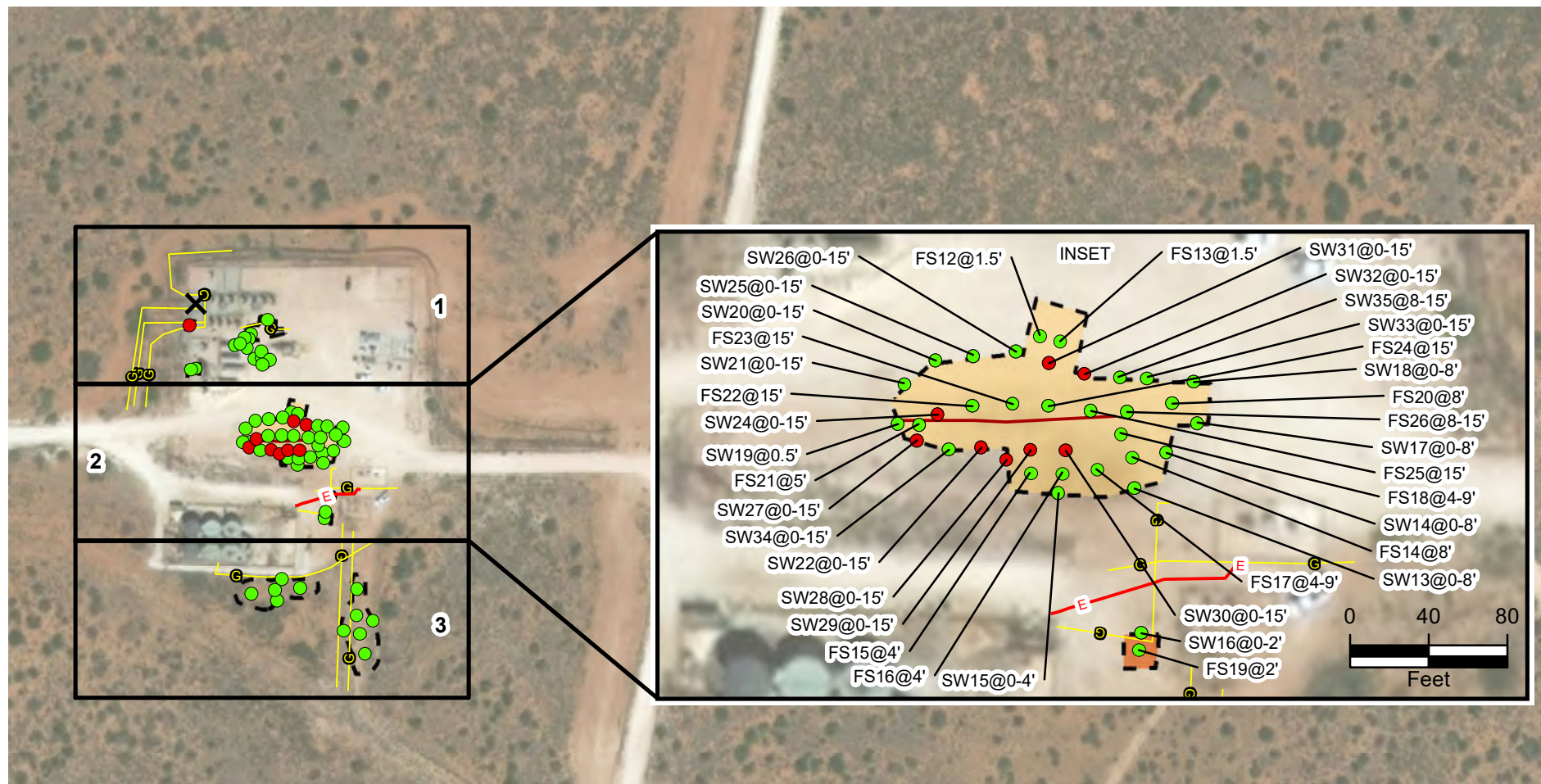


IMAGE COURTESY OF ESRI



FIGURE 4
EXCAVATION SOIL SAMPLE LOCATIONS - AREA 1
JAMES RANCH UNIT #138 RELEASE AT JRU 19 BATTERY
NWSE SEC 36 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.





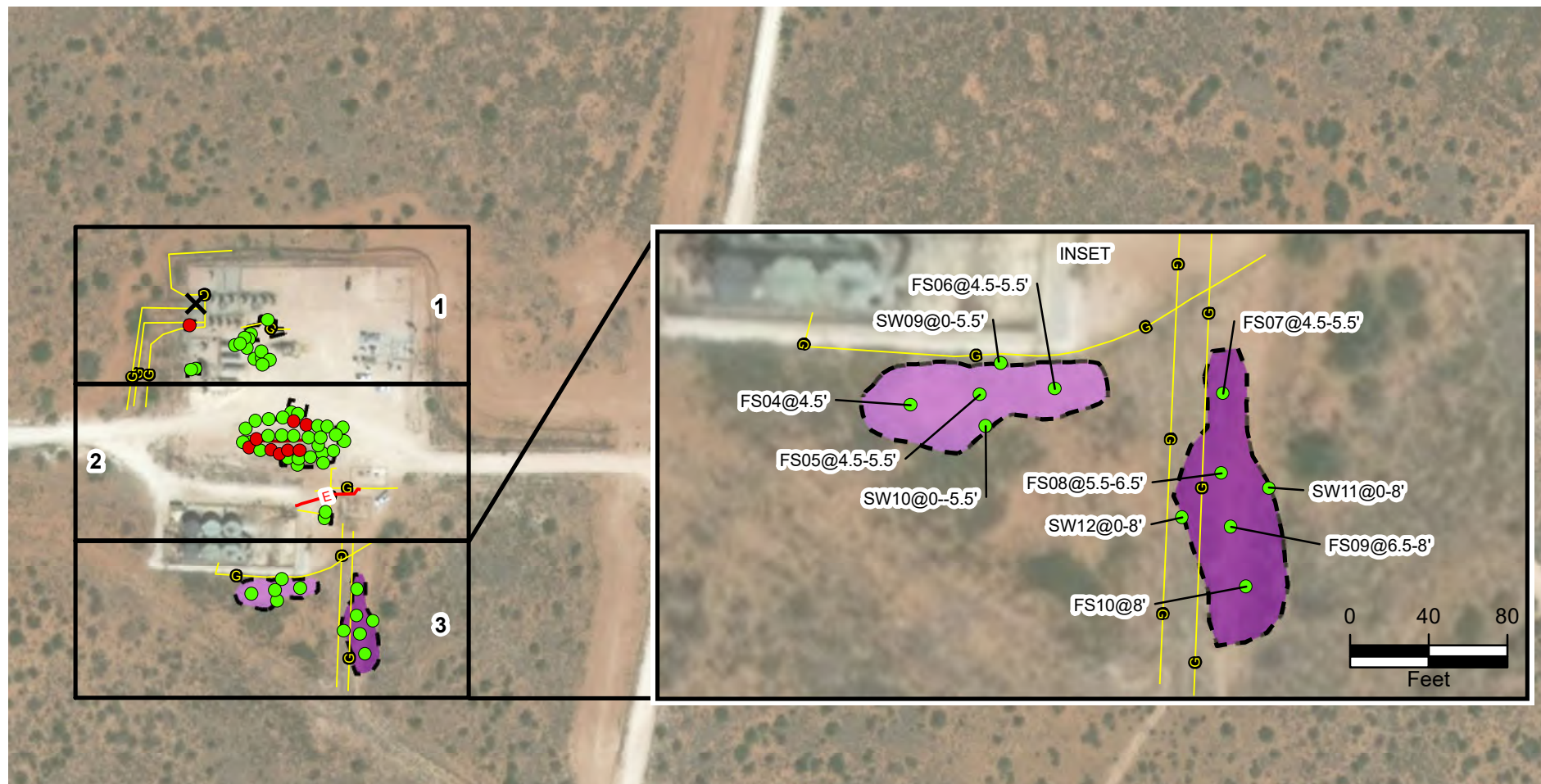
LEGEND

- RELEASE LOCATION
- EXCAVATION SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS
- EXCAVATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS
- ELECTRIC LINE
- GAS LINE
- INACTIVE LINE
- EXCAVATION EXTENT
- EXCAVATION EXTENT AREA 2A
- EXCAVATION EXTENT AREA 2B

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
NOTE: REMEDIATION PERMIT NUMBER 2RP-4980

FIGURE 5
EXCAVATION SOIL SAMPLE LOCATIONS - AREA 2
JAMES RANCH UNIT #138 RELEASE AT JRU 19 BATTERY
NWSE SEC 36 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.





LEGEND

- RELEASE LOCATION
- EXCAVATION SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS
- EXCAVATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS
- ELECTRIC LINE
- GAS LINE
- INACTIVE LINE
- EXCAVATION EXTENT
- EXCAVATION EXTENT AREA 3A
- EXCAVATION EXTENT AREA 3B

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
NOTE: REMEDIATION PERMIT NUMBER 2RP-4980

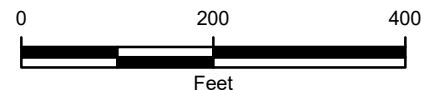


IMAGE COURTESY OF ESR1



FIGURE 6
EXCAVATION SOIL SAMPLE LOCATIONS - AREA 3
JAMES RANCH UNIT #138 RELEASE AT JRU 19 BATTERY
NWSE SEC 36 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



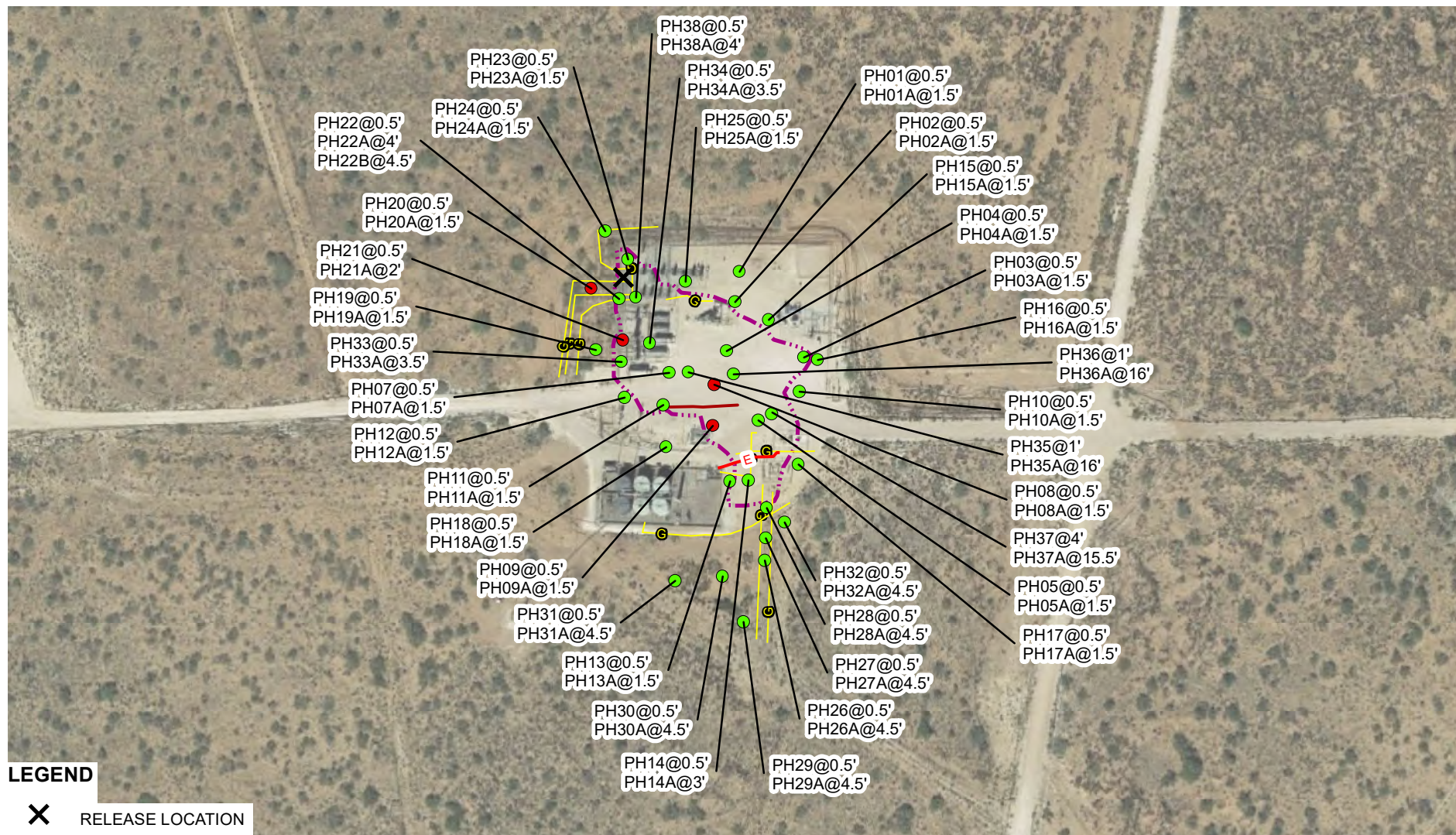


IMAGE COURTESY OF GOOGLE EARTH 2017

LEGEND



RELEASE LOCATION



DELINEATION SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS



DELINEATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS



ELECTRIC LINE



GAS LINE



INACTIVE LINE



RELEASE EXTENT

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)

NOTE: REMEDIATION PERMIT NUMBER 2RP-4980

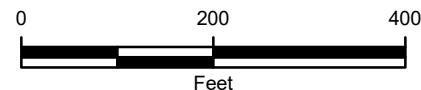


FIGURE 7
DELINEATION SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT #138 RELEASE AT JRU 19 BATTERY
NWSE SEC 36 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



**TABLE 1
SOIL ANALYTICAL RESULTS**

**JAMES RANCH UNIT #138 RELEASE AT JRU 19 BATTERY
REMEDATION PERMIT NUMBER 2RP-4980
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)
Preliminary Soil Samples													
SS01	0.5	09/12/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	<5.01*
SS02	0.5	09/12/2018	<0.00202	<0.00202	0.00292	0.0235	0.0264	<15.0	653	89.0	653	742	860
SS03	0.5	09/12/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	404	68.0	404	472	5,420
SS04	0.5	09/12/2018	0.00580	0.00682	<0.00201	<0.00201	0.0126	<15.0	20.8	<15.0	20.8	20.8	25,000
SS05	0.5	09/12/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	16.5	<15.0	16.5	16.5	1,560
SS06	0.5	09/12/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	434
SS07	0.5	09/12/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	57.3	<15.0	57.3	57.3	6,430*
SS08	0.5	09/12/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	<4.98*
SS09	0.5	09/12/2018	0.110	0.372	1.90	10.8	13.2	290	1,980	204	2,270	2,470	<4.95*
SS10	1.5	09/27/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	712
SS11	2	10/02/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	2,100
Excavation Soil Samples													
FS01	4	10/02/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	55.6	<15.0	55.6	55.6	4,210
FS02	4	10/02/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	31.4	<15.0	31.4	31.4	6,060
FS03	4	10/02/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	188	30.2	188	218	1,760
FS04	4.5	05/20/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	7.25
FS05	4.5 - 5.5	05/20/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	752
FS06	4.5 - 5.5	05/20/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	502
FS07	4.5 - 5.5	05/20/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	21.4	<15.0	21.4	21.4	327
FS08	5.5 - 6.5	05/20/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	141	18.1	141	159	3,100
FS09	6.5 - 8	05/20/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	15.6	<14.9	15.6	15.6	3,110
FS10	8	05/20/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	16.2	<15.0	16.2	16.2	3,250
FS11	0 - 1	05/21/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	1,320



**TABLE 1
SOIL ANALYTICAL RESULTS**

**JAMES RANCH UNIT #138 RELEASE AT JRU 19 BATTERY
REMEDATION PERMIT NUMBER 2RP-4980
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)
Excavation Soil Samples													
FS12	1.5	05/23/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	238	45.0	283	238	128
FS13	1.5	05/23/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	327
FS14	8	05/23/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	1,490
FS15	4	05/24/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	36.0	<14.9	36.0	36.0	870
FS16	4	05/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	37.8	<15.0	37.8	37.8	776
FS17	4 - 9	05/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,160
FS18	4 - 9	05/24/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	979
FS19	2	05/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	26.3	<15.0	26.3	26.3	274
FS20	8	05/30/2019	<0.00200	0.154	0.0329	0.138	0.325	143	783	47.6	926	974	322
FS21	5	05/31/2019	<0.00202	0.00371	<0.00202	0.00885	0.0126	29.2	682	185	711	896	1,370
FS22	15	06/03/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	15.4	<15.0	15.4	15.4	1,350
FS23	15	06/03/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	50.9
FS24	15	06/03/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	394
FS25	15	06/03/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	16.2	<15.0	16.2	16.2	1,190
FS26	8 - 15	06/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	170
FS27	0.5	06/04/2019	<0.00200	<0.00200	<0.00200	0.0114	0.0114	62.8	2,940	400	3,000	3,400	695
FS28	1	06/04/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	60.3	16.8	60.3	77.1	188
FS29	1	06/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	89.9	24.3	89.9	114	194
SW01	2	10/02/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	17.1	57.1	<15.0	74.2	74.2	2,970
SW02	2	10/02/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	65.7	36.0	65.7	102	267
SW03	2	10/02/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	4,850
SW04	2	10/02/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	31.3	<14.9	31.3	31.3	2,290
SW05	2	10/02/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	1,000
SW06	2	10/02/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	2,610



**TABLE 1
SOIL ANALYTICAL RESULTS**

**JAMES RANCH UNIT #138 RELEASE AT JRU 19 BATTERY
REMEDATION PERMIT NUMBER 2RP-4980
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)
Excavation Soil Samples													
SW07	2	10/02/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	498
SW08	2	10/02/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	84.0	<14.9	84.0	84.0	8,130
SW09	0 - 5.5	05/20/2019	<0.00200	<0.00200	<0.00200	0.00929	0.00929	18.1	515	67.2	533	600	217*
SW10	0 - 5.5	05/20/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	<14.9	10.6*
SW11	0 - 8	05/20/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	16.2*
SW12	0 - 8	05/20/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	16.3*
SW13	0 - 8	05/23/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	20.3	1270	297	1590	1290	1,170
SW14	0 - 8	05/23/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	1530	327	1860	1530	1,740
SW15	0 - 4	05/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	1030	244	1270	1030	396
SW16	0 - 2	05/30/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.04
SW17	0 - 8	05/30/2019	<0.00199	0.0199	0.00510	0.0307	0.0557	55.1	481	47.4	536	584	1,080
SW18	0 - 8	05/30/2019	<0.00201	0.0160	0.00395	0.0223	0.0422	58.4	854	56.1	912	969	621
SW19	0.5	05/31/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	105	53.8	105	159	570
SW20	0 - 15	06/03/2019	<0.00198	<0.00198	<0.00198	0.00383	0.00383	<15.0	104	15.7	104	120	1,040
SW21	0 - 15	06/03/2019	<0.00199	0.00433	<0.00199	0.00922	0.0136	23.9	248	30.4	272	302	569
SW22	0 - 15	06/03/2019	<0.200	1.14	2.02	3.44	6.60	547	3,810	455	4,360	4,810	1,430
SW23	0 - 15	06/03/2019	0.102	<0.101	<0.101	0.477	0.579	69.7	1,490	226	1,560	1,790	1,180
SW24	0 - 15	06/03/2019	<0.199	0.387	1.28	8.73	10.4	954	3,470	358	4,420	4,780	1,990
SW25	0 - 15	06/03/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	440
SW26	0 - 15	06/03/2019	<0.00200	0.00466	0.00784	0.0924	0.105	56.0	459	47.8	515	563	807
SW27	0 - 15	06/03/2019	<0.00202	<0.00202	<0.00202	0.00412	0.00412	35.7	1,230	203	1,270	1,470	806
SW28	0 - 15	06/03/2019	<0.00200	0.0250	0.0310	0.276	0.332	214	1,290	170	1,500	1,670	1,380
SW29	0 - 15	06/03/2019	0.00253	0.0352	0.0421	0.404	0.484	356	1,760	196	2,120	2,310	1,920
SW30	0 - 15	06/03/2019	0.00320	0.0370	0.0464	0.429	0.516	406	1,650	158	2,060	2,210	1,640



**TABLE 1
SOIL ANALYTICAL RESULTS**

**JAMES RANCH UNIT #138 RELEASE AT JRU 19 BATTERY
REMEDATION PERMIT NUMBER 2RP-4980
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)
Excavation Soil Samples													
SW31	0 - 15	06/03/2019	<0.00198	0.00460	0.0113	0.0617	0.0776	59.6	1,160	153	1,220	1,370	397
SW32	0 - 15	06/03/2019	<0.00199	<0.00199	0.0206	0.113	0.133	188	1,330	146	1,520	1,660	1,660
SW33	0 - 15	06/04/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<14.9	15.5	<14.9	15.5	15.5	626
SW34	0 - 15	06/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	99.0	23.1	99.0	122	979
SW35	8 - 15	06/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	30.4	<15.0	30.4	30.4	833
Delineation Soil Samples													
PH01	0.5	09/26/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	369
PH01A	1.5	09/26/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	373
PH02	0.5	09/26/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	186
PH02A	1.5	09/26/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	214
PH03	0.5	09/26/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	57.2	<14.9	57.2	57.2	1,910
PH03A	1.5	09/26/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	212
PH04	0.5	09/26/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	59.9	<14.9	59.9	59.9	3,360
PH04A	1.5	09/26/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	128
PH05	0.5	09/26/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	952	63.2	952	1,020	6,000
PH05A	1.5	09/26/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	63.4	<15.0	63.4	63.4	337
PH07	0.5	09/26/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	97.1	15.9	97.1	113	1,380
PH07A	1.5	09/26/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	39.3
PH08	0.5	09/26/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	23.1	2,210	49.6	2,233	2,280	1,270
PH08A	1.5	09/26/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	78.8	<15.0	78.8	78.8	544
PH09	0.5	09/26/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	2,520	89.8	2,520	2,610	486
PH09A	1.5	09/26/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	54.6	<15.0	54.6	54.6	758
PH10	0.5	09/27/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	362
PH10A	1.5	09/27/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	<14.9	212



**TABLE 1
SOIL ANALYTICAL RESULTS**

**JAMES RANCH UNIT #138 RELEASE AT JRU 19 BATTERY
REMEDATION PERMIT NUMBER 2RP-4980
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)
Delineation Soil Samples													
PH11	0.5	09/27/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	711	54.5	711	766	1,580
PH11A	1.5	09/27/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	602
PH12	0.5	09/27/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	285
PH12A	1.5	09/27/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	47.8
PH13	0.5	09/27/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	<4.96
PH13A	1.5	09/27/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
PH14	0.5	09/27/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	43.4	<15.0	43.4	43.4	13,300
PH14A	3	09/27/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	160
PH15	0.5	10/01/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	193
PH15A	1.5	10/01/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	214
PH16	0.5	10/01/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	10.0
PH16A	1.5	10/01/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	<14.9	38.4
PH17	0.5	10/01/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	<4.96
PH17A	1.5	10/01/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<4.97
PH18	0.5	10/01/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	99.4
PH18A	1.5	10/01/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	106
PH19	0.5	10/01/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	114	35.6	114	150	103*
PH19A	1.5	10/01/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	44.8	<15.0	44.8	44.8	<4.96*
PH20	0.5	10/01/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<14.9	31.8	<14.9	31.8	31.8	697*
PH20A	1.5	10/01/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	188*
PH21	0.5	10/01/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	1,960	53.3	1,960	2,010	5,280
PH21A	2	10/01/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	321
PH22	0.5	10/01/2018	<0.00200	0.00274	0.00253	0.0249	0.0302	31.5	1,460	44.8	1,490	1,540	7,810
PH22A	4	10/01/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	28.8	998	44.1	1,030	1,070	14,000



**TABLE 1
SOIL ANALYTICAL RESULTS**

**JAMES RANCH UNIT #138 RELEASE AT JRU 19 BATTERY
REMEDATION PERMIT NUMBER 2RP-4980
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)
Delineation Soil Samples													
PH22B	4.5	06/06/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	20.6	<15.0	20.6	20.6	7,030
PH23	0.5	10/01/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	<5.04
PH23A	1.5	10/01/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<4.98
PH24	0.5	10/01/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.96*
PH24A	1.5	10/01/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99*
PH25	0.5	10/01/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	23.7	<15.0	23.7	23.7	1,020
PH25A	1.5	10/01/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	33.9
PH26	0.5	05/16/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	25.9	<15.0	25.9	25.9	<5.00*
PH26A	4.5	05/16/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	26.5
PH27	0.5	05/16/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	<14.9	<4.96*
PH27A	4.5	05/16/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	8.68
PH28	0.5	05/16/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00*
PH28A	4.5	05/16/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	<4.96
PH29	0.5	05/20/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<5.04*
PH29A	4.5	05/20/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.98
PH30	0.5	05/20/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00*
PH30A	4.5	05/20/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	<4.96
PH31	0.5	05/20/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	<5.05*
PH31A	4.5	05/20/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<5.01
PH32	0.5	05/16/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	81.4	27.2	81.4	109	239*
PH32A	4.5	05/16/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	184
PH33	0.5	05/31/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	229
PH33A	3.5	05/31/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	34.8	<15.0	34.8	34.8	3,340
PH34	0.5	05/31/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<14.9	<14.9	<14.9	<14.9	<14.9	10.3



**TABLE 1
SOIL ANALYTICAL RESULTS**

**JAMES RANCH UNIT #138 RELEASE AT JRU 19 BATTERY
REMEDATION PERMIT NUMBER 2RP-4980
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)
Delineation Soil Samples													
PH34A	3.5	05/31/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	28.5	<15.0	28.5	28.5	1,480
PH35	1	06/06/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	38
PH35A	16	06/06/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	22
PH36	1	06/06/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	153
PH36A	16	06/06/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	17
PH37	4	06/06/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	1,350
PH37A	15.5	06/06/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	163
PH38	0.5	06/06/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	402	126	402	528	7,370
PH38A	4	06/06/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	637	167	637	804	2,270
NMOCDC Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

ORO - motor oil range organics

NMAC - New Mexico Administrative Code

NMOCDC - New Mexico Oil Conservation Division

NE - not established

TPH - total petroleum hydrocarbons

< - indicates result is below laboratory reporting limits

Bold - indicates result exceeds the applicable regulatory standard

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

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





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	NMAP1826932726
District RP	2 RP-4980
Facility ID	N/A
Application ID	pMAP1826932442

Release Notification

Responsible Party

Responsible Party XTO Energy	OGRID5380
Contact Name Kyle Littrell	Contact Telephone 432-221-7331
Contact email Kyle_Littrell@xtoenergy.com	Incident # (assigned by OCD) NMAP1826932726
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.346880 Longitude -103.832500
(NAD 83 in decimal degrees to 5 decimal places)

Site Name James Ranch Unit #138 release at JRU 19 Battery	Site Type Separation/Bulk Storage Facility
Date Release Discovered 9/8/2018	API# (if applicable) 30-015-39766

Unit Letter	Section	Township	Range	County
J	36	22S	30E	Eddy

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (Name: New Mexico)

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) 194	Volume Recovered (bbls) 180
☒ Produced Water	Volume Released (bbls) 667	Volume Recovered (bbls) 620
	Is the concentration of total dissolved solids (TDS) 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

Fluids were released from a failed check valve on the JRU 138 flow line header at its entrance to the battery. The well was temporarily shut down and the tubing and casing were shut in. Free standing fluids were recovered. The valve was repaired and the well was returned to production. An environmental contractor has been retained to assist with remediation efforts.

State of New Mexico
Oil Conservation Division

Incident ID	NMAP1826932726
District RP	2 RP-4980
Facility ID	N/A
Application ID	pMAP1826932442

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release of a volume of 25 barrels or more
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Notice was provided by Kyle Littrell to Maria Pruett/Mike Bratcher/Jim Griswold (NMOCD), Ryan Mann (SLO), and Shelly Tucker/Jim Amos (BLM) on 9/8/18 by email.	

Initial Response

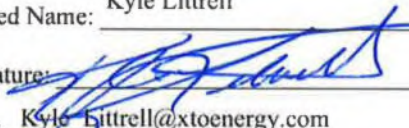
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

- ☒ The source of the release has been stopped.
- ☒ The impacted area has been secured to protect human health and the environment.
- ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
- ☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

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

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

Printed Name: Kyle Littrell Title: SH&E Coordinator
 Signature:  Date: 9-21-18
 email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by:  Date: 09/26/18

Incident ID	
District RP	2
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?	85 _____ (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 1/2-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.

Incident ID	
District RP	2RP-4980
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: _____ 6/29/2019 _____

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

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	2RP-4980
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: 6/29/2019

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

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____



Analytical Report 599230

for
LT Environmental, Inc.

Project Manager: Adrian Baker

JRU 19 New Spill

012917057

21-SEP-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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

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



21-SEP-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **599230**

JRU 19 New Spill

Project Address: Delaware Basin

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) 599230. 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. 599230 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

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	09-12-18 10:00	6 In	599230-001
SS02	S	09-12-18 10:05	6 In	599230-002
SS03	S	09-12-18 10:10	6 In	599230-003
SS04	S	09-12-18 10:15	6 In	599230-004
SS05	S	09-12-18 10:20	6 In	599230-005
SS06	S	09-12-18 10:25	6 In	599230-006
SS07	S	09-12-18 10:30	6 In	599230-007
SS08	S	09-12-18 10:35	6 In	599230-008
SS09	S	09-12-18 10:40	6 In	599230-009



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *JRU 19 New Spill*

Project ID: 012917057
Work Order Number(s): 599230

Report Date: 21-SEP-18
Date Received: 09/16/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3063623 BTEX by EPA 8021B

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

Batch: LBA-3063658 BTEX by EPA 8021B

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

Samples affected are: 599230-009.

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

Lab Sample ID 599230-003 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 599230-003, -009.

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

Batch: LBA-3064038 BTEX by EPA 8021B

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



Certificate of Analysis Summary 599230

LT Environmental, Inc., Arvada, CO

Project Name: JRU 19 New Spill



Project Id: 012917057
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Sun Sep-16-18 09:00 am
Report Date: 21-SEP-18
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	599230-001	599230-002	599230-003	599230-004	599230-005	599230-006
	<i>Field Id:</i>	SS01	SS02	SS03	SS04	SS05	SS06
	<i>Depth:</i>	6- In	6- In	6- In	6- In	6- In	6- In
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-12-18 10:00	Sep-12-18 10:05	Sep-12-18 10:10	Sep-12-18 10:15	Sep-12-18 10:20	Sep-12-18 10:25
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-18-18 08:00	Sep-18-18 08:00	Sep-18-18 09:00	Sep-19-18 10:00	Sep-19-18 10:00	Sep-19-18 10:00
	<i>Analyzed:</i>	Sep-18-18 13:54	Sep-18-18 15:07	Sep-19-18 07:17	Sep-19-18 12:27	Sep-19-18 12:49	Sep-19-18 13:09
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	0.00580 0.00201	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	0.00682 0.00201	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00198 0.00198	0.00292 0.00202	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00396 0.00396	0.0148 0.00403	<0.00399 0.00399	<0.00402 0.00402	<0.00398 0.00398	<0.00401 0.00401
o-Xylene		<0.00198 0.00198	0.00867 0.00202	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00198 0.00198	0.0235 0.00202	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00198 0.00198	0.0264 0.00202	<0.00200 0.00200	0.0126 0.00201	<0.00199 0.00199	<0.00200 0.00200
Inorganic Anions by EPA 300	<i>Extracted:</i>	Sep-19-18 14:35	Sep-19-18 14:35	Sep-19-18 14:35	Sep-19-18 14:35	Sep-19-18 14:35	Sep-19-18 14:35
	<i>Analyzed:</i>	Sep-19-18 20:59	Sep-19-18 21:16	Sep-19-18 21:21	Sep-19-18 21:38	Sep-19-18 21:44	Sep-19-18 21:50
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.01 5.01	860 4.96	5420 50.4	25000 249	1560 24.8	434 5.00
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-17-18 13:00	Sep-17-18 13:00	Sep-17-18 13:00	Sep-17-18 13:00	Sep-17-18 13:00	Sep-17-18 13:00
	<i>Analyzed:</i>	Sep-17-18 16:28	Sep-17-18 17:25	Sep-17-18 17:44	Sep-17-18 18:03	Sep-17-18 18:22	Sep-17-18 18:40
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	653 15.0	404 14.9	20.8 15.0	16.5 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	89.0 15.0	68.0 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	742 15.0	472 14.9	20.8 15.0	16.5 15.0	<15.0 15.0

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 599230

LT Environmental, Inc., Arvada, CO

Project Name: JRU 19 New Spill



Project Id: 012917057
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Sun Sep-16-18 09:00 am
Report Date: 21-SEP-18
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	599230-007	599230-008	599230-009			
	Field Id:	SS07	SS08	SS09			
	Depth:	6- In	6- In	6- In			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Sep-12-18 10:30	Sep-12-18 10:35	Sep-12-18 10:40			
BTEX by EPA 8021B	Extracted:	Sep-19-18 10:00	Sep-19-18 10:00	Sep-18-18 09:00			
	Analyzed:	Sep-19-18 14:34	Sep-19-18 14:56	Sep-19-18 08:37			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00199 0.00199	<0.00200 0.00200	0.110 0.0501			
Toluene		<0.00199 0.00199	<0.00200 0.00200	0.372 0.0501			
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	1.90 0.0501			
m,p-Xylenes		<0.00398 0.00398	<0.00399 0.00399	7.79 0.100			
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	3.03 0.0501			
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	10.8 0.0501			
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	13.2 0.0501			
Inorganic Anions by EPA 300	Extracted:	Sep-19-18 14:35	Sep-19-18 14:35	Sep-19-18 14:35			
	Analyzed:	Sep-19-18 21:56	Sep-19-18 22:01	Sep-19-18 22:07			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		6430 50.1	<4.98 4.98	<4.95 4.95			
TPH by SW8015 Mod	Extracted:	Sep-17-18 13:00	Sep-17-18 13:00	Sep-17-18 13:00			
	Analyzed:	Sep-17-18 18:59	Sep-17-18 19:17	Sep-17-18 19:36			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	290 15.0			
Diesel Range Organics (DRO)		57.3 15.0	<14.9 14.9	1980 15.0			
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	204 15.0			
Total TPH		57.3 15.0	<14.9 14.9	2470 15.0			

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Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS01**
Lab Sample Id: 599230-001

Matrix: Soil
Date Collected: 09.12.18 10.00

Date Received: 09.16.18 09.00
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: SCM

Seq Number: 3063799

Date Prep: 09.19.18 14.35

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.01	5.01	mg/kg	09.19.18 20.59	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3063513

Date Prep: 09.17.18 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.17.18 16.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.17.18 16.28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.17.18 16.28	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.17.18 16.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	09.17.18 16.28	
o-Terphenyl	84-15-1	104	%	70-135	09.17.18 16.28	



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS01**
Lab Sample Id: 599230-001

Matrix: Soil
Date Collected: 09.12.18 10.00

Date Received: 09.16.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3063623

Date Prep: 09.18.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	09.18.18 13.54	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.18.18 13.54	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.18.18 13.54	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	09.18.18 13.54	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	09.18.18 13.54	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	09.18.18 13.54	U	1
Total BTEX		<0.00198	0.00198	mg/kg	09.18.18 13.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	09.18.18 13.54		
1,4-Difluorobenzene	540-36-3	112	%	70-130	09.18.18 13.54		



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS02** Matrix: Soil Date Received: 09.16.18 09.00
Lab Sample Id: 599230-002 Date Collected: 09.12.18 10.05 Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: SCM Date Prep: 09.19.18 14.35 Basis: Wet Weight
Seq Number: 3063799

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	860	4.96	mg/kg	09.19.18 21.16		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 09.17.18 13.00 Basis: Wet Weight
Seq Number: 3063513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.17.18 17.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	653	15.0	mg/kg	09.17.18 17.25		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	89.0	15.0	mg/kg	09.17.18 17.25		1
Total TPH	PHC635	742	15.0	mg/kg	09.17.18 17.25		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	09.17.18 17.25	
o-Terphenyl	84-15-1	126	%	70-135	09.17.18 17.25	



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS02**
Lab Sample Id: 599230-002

Matrix: Soil
Date Collected: 09.12.18 10.05

Date Received: 09.16.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3063623

Date Prep: 09.18.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.18.18 15.07	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.18.18 15.07	U	1
Ethylbenzene	100-41-4	0.00292	0.00202	mg/kg	09.18.18 15.07		1
m,p-Xylenes	179601-23-1	0.0148	0.00403	mg/kg	09.18.18 15.07		1
o-Xylene	95-47-6	0.00867	0.00202	mg/kg	09.18.18 15.07		1
Total Xylenes	1330-20-7	0.0235	0.00202	mg/kg	09.18.18 15.07		1
Total BTEX		0.0264	0.00202	mg/kg	09.18.18 15.07		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	122		%	70-130	09.18.18 15.07	
1,4-Difluorobenzene	540-36-3	108		%	70-130	09.18.18 15.07	



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS03** Matrix: Soil Date Received: 09.16.18 09.00
Lab Sample Id: 599230-003 Date Collected: 09.12.18 10.10 Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: SCM Date Prep: 09.19.18 14.35 Basis: Wet Weight
Seq Number: 3063799

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5420	50.4	mg/kg	09.19.18 21.21		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 09.17.18 13.00 Basis: Wet Weight
Seq Number: 3063513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.17.18 17.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	404	14.9	mg/kg	09.17.18 17.44		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	68.0	14.9	mg/kg	09.17.18 17.44		1
Total TPH	PHC635	472	14.9	mg/kg	09.17.18 17.44		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	96	%	70-135	09.17.18 17.44		
o-Terphenyl	84-15-1	107	%	70-135	09.17.18 17.44		



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS03**
Lab Sample Id: 599230-003

Matrix: Soil
Date Collected: 09.12.18 10.10

Date Received: 09.16.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3063658

Date Prep: 09.18.18 09.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.19.18 07.17	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.19.18 07.17	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.19.18 07.17	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.19.18 07.17	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.19.18 07.17	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.19.18 07.17	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.19.18 07.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.19.18 07.17		
4-Bromofluorobenzene	460-00-4	120	%	70-130	09.19.18 07.17		



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS04**
Lab Sample Id: 599230-004

Matrix: Soil
Date Collected: 09.12.18 10.15

Date Received: 09.16.18 09.00
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300
Tech: CHE
Analyst: SCM
Seq Number: 3063799

Date Prep: 09.19.18 14.35

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	25000	249	mg/kg	09.19.18 21.38		50

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3063513

Date Prep: 09.17.18 13.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.17.18 18.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	20.8	15.0	mg/kg	09.17.18 18.03		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.17.18 18.03	U	1
Total TPH	PHC635	20.8	15.0	mg/kg	09.17.18 18.03		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	99	%	70-135	09.17.18 18.03		
o-Terphenyl	84-15-1	102	%	70-135	09.17.18 18.03		



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS04**
Lab Sample Id: 599230-004

Matrix: Soil
Date Collected: 09.12.18 10.15

Date Received: 09.16.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064038

Date Prep: 09.19.18 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00580	0.00201	mg/kg	09.19.18 12.27		1
Toluene	108-88-3	0.00682	0.00201	mg/kg	09.19.18 12.27		1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.19.18 12.27	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.19.18 12.27	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.19.18 12.27	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.19.18 12.27	U	1
Total BTEX		0.0126	0.00201	mg/kg	09.19.18 12.27		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	09.19.18 12.27		
1,4-Difluorobenzene	540-36-3	99	%	70-130	09.19.18 12.27		



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS05**
Lab Sample Id: 599230-005

Matrix: Soil
Date Collected: 09.12.18 10.20

Date Received: 09.16.18 09.00
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300
Tech: CHE
Analyst: SCM
Seq Number: 3063799

Date Prep: 09.19.18 14.35

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1560	24.8	mg/kg	09.19.18 21.44		5

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3063513

Date Prep: 09.17.18 13.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.17.18 18.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	16.5	15.0	mg/kg	09.17.18 18.22		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.17.18 18.22	U	1
Total TPH	PHC635	16.5	15.0	mg/kg	09.17.18 18.22		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	100	%	70-135	09.17.18 18.22		
o-Terphenyl	84-15-1	103	%	70-135	09.17.18 18.22		



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS05**
Lab Sample Id: 599230-005

Matrix: Soil
Date Collected: 09.12.18 10.20

Date Received: 09.16.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064038

Date Prep: 09.19.18 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.19.18 12.49	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.19.18 12.49	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.19.18 12.49	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.19.18 12.49	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.19.18 12.49	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.19.18 12.49	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.19.18 12.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	88	%	70-130	09.19.18 12.49		
1,4-Difluorobenzene	540-36-3	87	%	70-130	09.19.18 12.49		



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS06** Matrix: Soil Date Received: 09.16.18 09.00
Lab Sample Id: 599230-006 Date Collected: 09.12.18 10.25 Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: SCM Date Prep: 09.19.18 14.35 Basis: Wet Weight
Seq Number: 3063799

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	434	5.00	mg/kg	09.19.18 21.50		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 09.17.18 13.00 Basis: Wet Weight
Seq Number: 3063513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.17.18 18.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.17.18 18.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.17.18 18.40	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.17.18 18.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	09.17.18 18.40	
o-Terphenyl	84-15-1	101	%	70-135	09.17.18 18.40	



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS06**
Lab Sample Id: 599230-006

Matrix: Soil
Date Collected: 09.12.18 10.25

Date Received: 09.16.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064038

Date Prep: 09.19.18 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.19.18 13.09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.19.18 13.09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.19.18 13.09	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.19.18 13.09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.19.18 13.09	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.19.18 13.09	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.19.18 13.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	09.19.18 13.09		
1,4-Difluorobenzene	540-36-3	97	%	70-130	09.19.18 13.09		



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS07** Matrix: Soil Date Received: 09.16.18 09.00
Lab Sample Id: 599230-007 Date Collected: 09.12.18 10.30 Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: SCM Date Prep: 09.19.18 14.35 Basis: Wet Weight
Seq Number: 3063799

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6430	50.1	mg/kg	09.19.18 21.56		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 09.17.18 13.00 Basis: Wet Weight
Seq Number: 3063513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.17.18 18.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	57.3	15.0	mg/kg	09.17.18 18.59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.17.18 18.59	U	1
Total TPH	PHC635	57.3	15.0	mg/kg	09.17.18 18.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	09.17.18 18.59	
o-Terphenyl	84-15-1	101	%	70-135	09.17.18 18.59	



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS07**
Lab Sample Id: 599230-007

Matrix: Soil
Date Collected: 09.12.18 10.30

Date Received: 09.16.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064038

Date Prep: 09.19.18 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.19.18 14.34	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.19.18 14.34	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.19.18 14.34	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.19.18 14.34	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.19.18 14.34	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.19.18 14.34	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.19.18 14.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	09.19.18 14.34		
1,4-Difluorobenzene	540-36-3	97	%	70-130	09.19.18 14.34		



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS08** Matrix: Soil Date Received: 09.16.18 09.00
Lab Sample Id: 599230-008 Date Collected: 09.12.18 10.35 Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: SCM Date Prep: 09.19.18 14.35 Basis: Wet Weight
Seq Number: 3063799

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	09.19.18 22.01	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 09.17.18 13.00 Basis: Wet Weight
Seq Number: 3063513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.17.18 19.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.17.18 19.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.17.18 19.17	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.17.18 19.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	09.17.18 19.17	
o-Terphenyl	84-15-1	106	%	70-135	09.17.18 19.17	



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS08**
Lab Sample Id: 599230-008

Matrix: Soil
Date Collected: 09.12.18 10.35

Date Received: 09.16.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3064038

Date Prep: 09.19.18 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.19.18 14.56	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.19.18 14.56	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.19.18 14.56	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.19.18 14.56	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.19.18 14.56	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.19.18 14.56	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.19.18 14.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	09.19.18 14.56		
1,4-Difluorobenzene	540-36-3	109	%	70-130	09.19.18 14.56		



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS09** Matrix: Soil Date Received: 09.16.18 09.00
Lab Sample Id: 599230-009 Date Collected: 09.12.18 10.40 Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: SCM Date Prep: 09.19.18 14.35 Basis: Wet Weight
Seq Number: 3063799

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	09.19.18 22.07	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 09.17.18 13.00 Basis: Wet Weight
Seq Number: 3063513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	290	15.0	mg/kg	09.17.18 19.36		1
Diesel Range Organics (DRO)	C10C28DRO	1980	15.0	mg/kg	09.17.18 19.36		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	204	15.0	mg/kg	09.17.18 19.36		1
Total TPH	PHC635	2470	15.0	mg/kg	09.17.18 19.36		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	122	%	70-135	09.17.18 19.36		
o-Terphenyl	84-15-1	129	%	70-135	09.17.18 19.36		



Certificate of Analytical Results 599230



LT Environmental, Inc., Arvada, CO

JRU 19 New Spill

Sample Id: **SS09**
Lab Sample Id: 599230-009

Matrix: Soil
Date Collected: 09.12.18 10.40

Date Received: 09.16.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3063658

Date Prep: 09.18.18 09.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.110	0.0501	mg/kg	09.19.18 08.37		25
Toluene	108-88-3	0.372	0.0501	mg/kg	09.19.18 08.37		25
Ethylbenzene	100-41-4	1.90	0.0501	mg/kg	09.19.18 08.37		25
m,p-Xylenes	179601-23-1	7.79	0.100	mg/kg	09.19.18 08.37		25
o-Xylene	95-47-6	3.03	0.0501	mg/kg	09.19.18 08.37		25
Total Xylenes	1330-20-7	10.8	0.0501	mg/kg	09.19.18 08.37		25
Total BTEX		13.2	0.0501	mg/kg	09.19.18 08.37		25
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	790	%	70-130	09.19.18 08.37	**	
1,4-Difluorobenzene	540-36-3	104	%	70-130	09.19.18 08.37		

- 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 599230

LT Environmental, Inc.

JRU 19 New Spill

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3063799

MB Sample Id: 7662625-1-BLK

Matrix: Solid

LCS Sample Id: 7662625-1-BKS

Prep Method: E300P

Date Prep: 09.19.18

LCSD Sample Id: 7662625-1-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	254	102	254	102	90-110	0	20	mg/kg	09.19.18 19:28	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3063799

Parent Sample Id: 599224-013

Matrix: Soil

MS Sample Id: 599224-013 S

Prep Method: E300P

Date Prep: 09.19.18

MSD Sample Id: 599224-013 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.853	249	264	106	265	106	90-110	0	20	mg/kg	09.19.18 19:45	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3063799

Parent Sample Id: 599230-001

Matrix: Soil

MS Sample Id: 599230-001 S

Prep Method: E300P

Date Prep: 09.19.18

MSD Sample Id: 599230-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.860	251	231	92	246	98	90-110	6	20	mg/kg	09.19.18 21:04	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3063513

MB Sample Id: 7662480-1-BLK

Matrix: Solid

LCS Sample Id: 7662480-1-BKS

Prep Method: TX1005P

Date Prep: 09.17.18

LCSD Sample Id: 7662480-1-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	1010	101	1020	102	70-135	1	20	mg/kg	09.17.18 14:33	
Diesel Range Organics (DRO)	<8.13	1000	1020	102	1050	105	70-135	3	20	mg/kg	09.17.18 14:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		125		124		70-135	%	09.17.18 14:33
o-Terphenyl	114		123		112		70-135	%	09.17.18 14:33

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

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

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

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



QC Summary 599230

LT Environmental, Inc.

JRU 19 New Spill

Analytical Method: TPH by SW8015 Mod

Seq Number: 3063513

Parent Sample Id: 599230-001

Matrix: Soil

MS Sample Id: 599230-001 S

Prep Method: TX1005P

Date Prep: 09.17.18

MSD Sample Id: 599230-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	962	96	966	97	70-135	0	20	mg/kg	09.17.18 16:47	
Diesel Range Organics (DRO)	13.4	999	1040	103	1050	104	70-135	1	20	mg/kg	09.17.18 16:47	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		129		70-135	%	09.17.18 16:47
o-Terphenyl	120		120		70-135	%	09.17.18 16:47

Analytical Method: BTEX by EPA 8021B

Seq Number: 3063623

MB Sample Id: 7662561-1-BLK

Matrix: Solid

LCS Sample Id: 7662561-1-BKS

Prep Method: SW5030B

Date Prep: 09.18.18

LCSD Sample Id: 7662561-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0931	93	0.0896	90	70-130	4	35	mg/kg	09.18.18 08:38	
Toluene	<0.00200	0.0998	0.0939	94	0.0882	88	70-130	6	35	mg/kg	09.18.18 08:38	
Ethylbenzene	<0.00200	0.0998	0.101	101	0.0948	95	70-130	6	35	mg/kg	09.18.18 08:38	
m,p-Xylenes	<0.00399	0.200	0.192	96	0.180	90	70-130	6	35	mg/kg	09.18.18 08:38	
o-Xylene	<0.00200	0.0998	0.0994	100	0.0942	94	70-130	5	35	mg/kg	09.18.18 08:38	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		100		100		70-130	%	09.18.18 08:38
4-Bromofluorobenzene	99		94		93		70-130	%	09.18.18 08:38

Analytical Method: BTEX by EPA 8021B

Seq Number: 3063658

MB Sample Id: 7662573-1-BLK

Matrix: Solid

LCS Sample Id: 7662573-1-BKS

Prep Method: SW5030B

Date Prep: 09.18.18

LCSD Sample Id: 7662573-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0962	95	0.0877	87	70-130	9	35	mg/kg	09.18.18 08:41	
Toluene	<0.00201	0.101	0.0946	94	0.0938	93	70-130	1	35	mg/kg	09.18.18 08:41	
Ethylbenzene	<0.00201	0.101	0.100	99	0.0997	99	70-130	0	35	mg/kg	09.18.18 08:41	
m,p-Xylenes	<0.00402	0.201	0.194	97	0.193	96	70-130	1	35	mg/kg	09.18.18 08:41	
o-Xylene	<0.00201	0.101	0.0932	92	0.0931	92	70-130	0	35	mg/kg	09.18.18 08:41	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		95		89		70-130	%	09.18.18 08:41
4-Bromofluorobenzene	86		110		115		70-130	%	09.18.18 08:41

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

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

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 599230

LT Environmental, Inc.

JRU 19 New Spill

Analytical Method: BTEX by EPA 8021B

Seq Number: 3064038

MB Sample Id: 7662687-1-BLK

Matrix: Solid

LCS Sample Id: 7662687-1-BKS

Prep Method: SW5030B

Date Prep: 09.19.18

LCSD Sample Id: 7662687-1-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	0.0973	97	0.0898	89	70-130	8	35	mg/kg	09.19.18 07:46	
Toluene	<0.00200	0.100	0.0994	99	0.0900	89	70-130	10	35	mg/kg	09.19.18 07:46	
Ethylbenzene	<0.00200	0.100	0.113	113	0.0989	98	70-130	13	35	mg/kg	09.19.18 07:46	
m,p-Xylenes	<0.00401	0.200	0.220	110	0.190	95	70-130	15	35	mg/kg	09.19.18 07:46	
o-Xylene	<0.00200	0.100	0.111	111	0.0980	97	70-130	12	35	mg/kg	09.19.18 07:46	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		88		96		70-130	%	09.19.18 07:46
4-Bromofluorobenzene	71		89		97		70-130	%	09.19.18 07:46

Analytical Method: BTEX by EPA 8021B

Seq Number: 3063623

Parent Sample Id: 598983-013

Matrix: Soil

MS Sample Id: 598983-013 S

Prep Method: SW5030B

Date Prep: 09.18.18

MSD Sample Id: 598983-013 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	0.0740	73	0.0850	85	70-130	14	35	mg/kg	09.18.18 09:20	
Toluene	<0.00201	0.101	0.0747	74	0.0841	84	70-130	12	35	mg/kg	09.18.18 09:20	
Ethylbenzene	<0.00201	0.101	0.0802	79	0.0893	89	70-130	11	35	mg/kg	09.18.18 09:20	
m,p-Xylenes	<0.00402	0.201	0.152	76	0.170	85	70-130	11	35	mg/kg	09.18.18 09:20	
o-Xylene	<0.00201	0.101	0.0798	79	0.0874	87	70-130	9	35	mg/kg	09.18.18 09:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		98		70-130	%	09.18.18 09:20
4-Bromofluorobenzene	94		99		70-130	%	09.18.18 09:20

Analytical Method: BTEX by EPA 8021B

Seq Number: 3063658

Parent Sample Id: 599230-003

Matrix: Soil

MS Sample Id: 599230-003 S

Prep Method: SW5030B

Date Prep: 09.18.18

MSD Sample Id: 599230-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0564	57	0.0426	43	70-130	28	35	mg/kg	09.19.18 07:37	X
Toluene	<0.00199	0.0996	0.0435	44	0.0321	32	70-130	30	35	mg/kg	09.19.18 07:37	X
Ethylbenzene	<0.00199	0.0996	0.0349	35	0.0266	27	70-130	27	35	mg/kg	09.19.18 07:37	X
m,p-Xylenes	<0.00398	0.199	0.0672	34	0.0522	26	70-130	25	35	mg/kg	09.19.18 07:37	X
o-Xylene	<0.00199	0.0996	0.0330	33	0.0256	26	70-130	25	35	mg/kg	09.19.18 07:37	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		97		70-130	%	09.19.18 07:37
4-Bromofluorobenzene	111		123		70-130	%	09.19.18 07:37

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

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

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 599230

LT Environmental, Inc. JRU 19 New Spill

Analytical Method: BTEX by EPA 8021B

Seq Number: 3064038

Parent Sample Id: 599386-008

Matrix: Soil

MS Sample Id: 599386-008 S

Prep Method: SW5030B

Date Prep: 09.19.18

MSD Sample Id: 599386-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0583	58	0.0605	61	70-130	4	35	mg/kg	09.19.18 08:28	X
Toluene	<0.00202	0.101	0.0617	61	0.0600	60	70-130	3	35	mg/kg	09.19.18 08:28	X
Ethylbenzene	<0.00202	0.101	0.0691	68	0.0666	67	70-130	4	35	mg/kg	09.19.18 08:28	X
m,p-Xylenes	<0.00404	0.202	0.121	60	0.115	57	70-130	5	35	mg/kg	09.19.18 08:28	X
o-Xylene	<0.00202	0.101	0.0687	68	0.0669	67	70-130	3	35	mg/kg	09.19.18 08:28	X

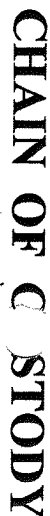
Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		120		70-130	%	09.19.18 08:28
4-Bromofluorobenzene	99		95		70-130	%	09.19.18 08:28

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

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

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

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



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Dallas Texas (214-902-0300)

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

Phoenix, Arizona (480-355-0900)

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[illegible]

Notice: Notice. Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenon, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenon will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenon. A minimum charge of \$75 will be applied to each Project. Xenon's liability will be limited to the cost of samples. Any samples received by Xenon 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: 09/16/2018 09:00:00 AM

Work Order #: 599230

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Katie Lowe

Date: 09/17/2018

Checklist reviewed by:

Jessica Kramer

Date: 09/17/2018

Analytical Report 600815

for
LT Environmental, Inc.

Project Manager: Adrian Baker

JRU 19

08-OCT-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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

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



08-OCT-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **600815**

JRU 19

Project Address: Carlsbad, NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 600815. 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. 600815 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

Project Assistant

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



Sample Cross Reference 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	09-26-18 10:50	6 In	600815-001
PH01A	S	09-26-18 10:55	1.5 ft	600815-002
PH02	S	09-26-18 12:30	6 In	600815-003
PH02A	S	09-26-18 12:35	1.5 ft	600815-004
PH03	S	09-26-18 12:45	6 In	600815-005
PH03A	S	09-26-18 12:50	1.5 ft	600815-006
PH04	S	09-26-18 13:10	6 In	600815-007
PH04A	S	09-26-18 13:15	1.5 ft	600815-008
PH05	S	09-26-18 14:10	6 In	600815-009
PH05A	S	09-26-18 14:15	1.5 ft	600815-010
PH07	S	09-26-18 14:55	6 In	600815-011
PH07A	S	09-26-18 15:00	1.5 ft	600815-012
PH08	S	09-26-18 15:10	6 In	600815-013
PH08A	S	09-26-18 15:20	1.5 ft	600815-014
PH09	S	09-26-18 16:00	6 In	600815-015
PH09A	S	09-26-18 16:15	1.5 ft	600815-016



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *JRU 19*

Project ID:
Work Order Number(s): 600815

Report Date: 08-OCT-18
Date Received: 09/29/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3065658 BTEX by EPA 8021B

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



Certificate of Analysis Summary 600815

LT Environmental, Inc., Arvada, CO

Project Name: JRU 19



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Sat Sep-29-18 09:00 am

Report Date: 08-OCT-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	600815-001	600815-002	600815-003	600815-004	600815-005	600815-006
	Field Id:	PH01	PH01A	PH02	PH02A	PH03	PH03A
	Depth:	6- In	1.5- ft	6- In	1.5- ft	6- In	1.5- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Sep-26-18 10:50	Sep-26-18 10:55	Sep-26-18 12:30	Sep-26-18 12:35	Sep-26-18 12:45	Sep-26-18 12:50
BTEX by EPA 8021B	Extracted:	Oct-05-18 16:45	Oct-05-18 16:45	Oct-05-18 16:45	Oct-05-18 16:45	Oct-05-18 16:45	Oct-05-18 16:45
	Analyzed:	Oct-06-18 05:36	Oct-06-18 05:57	Oct-06-18 06:18	Oct-06-18 06:39	Oct-06-18 07:00	Oct-06-18 07:21
	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	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
Toluene		<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
Ethylbenzene		<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
m,p-Xylenes		<0.00403 0.00403	<0.00398 0.00398	<0.00398 0.00398	<0.00401 0.00401	<0.00402 0.00402	<0.00403 0.00403
o-Xylene		<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
Total Xylenes		<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
Total BTEX		<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
Inorganic Anions by EPA 300	Extracted:	Oct-02-18 15:30	Oct-02-18 15:30	Oct-03-18 08:30	Oct-03-18 08:30	Oct-03-18 08:30	Oct-03-18 08:30
	Analyzed:	Oct-03-18 00:44	Oct-03-18 01:07	Oct-03-18 10:11	Oct-03-18 10:28	Oct-03-18 10:34	Oct-03-18 10:40
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		369 4.96	373 4.98	186 4.96	214 5.02	1910 25.0	212 4.96
TPH by SW8015 Mod	Extracted:	Oct-03-18 07:50	Oct-03-18 07:50	Oct-03-18 07:50	Oct-03-18 07:50	Oct-03-18 07:50	Oct-03-18 07:50
	Analyzed:	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *
	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	<14.9 14.9	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	57.2 14.9	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	57.2 14.9	<15.0 15.0

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 600815

LT Environmental, Inc., Arvada, CO

Project Name: JRU 19



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Sat Sep-29-18 09:00 am

Report Date: 08-OCT-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	600815-007	600815-008	600815-009	600815-010	600815-011	600815-012
	Field Id:	PH04	PH04A	PH05	PH05A	PH07	PH07A
	Depth:	6- In	1.5- ft	6- In	1.5- ft	6- In	1.5- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Sep-26-18 13:10	Sep-26-18 13:15	Sep-26-18 14:10	Sep-26-18 14:15	Sep-26-18 14:55	Sep-26-18 15:00
BTEX by EPA 8021B	Extracted:	Oct-05-18 16:45	Oct-05-18 16:45	Oct-05-18 16:45	Oct-05-18 16:45	Oct-05-18 16:45	Oct-05-18 16:45
	Analyzed:	Oct-06-18 07:44	Oct-06-18 08:06	Oct-06-18 08:28	Oct-06-18 08:49	Oct-06-18 09:52	Oct-06-18 10:14
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00399 0.00399	<0.00402 0.00402	<0.00404 0.00404	<0.00398 0.00398	<0.00399 0.00399
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200
Inorganic Anions by EPA 300	Extracted:	Oct-03-18 08:30	Oct-03-18 08:30	Oct-03-18 08:30	Oct-03-18 08:30	Oct-03-18 08:30	Oct-03-18 08:30
	Analyzed:	Oct-03-18 10:45	Oct-03-18 11:02	Oct-03-18 11:08	Oct-03-18 11:14	Oct-03-18 11:19	Oct-03-18 11:31
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		3360 25.0	128 4.96	6000 49.8	337 4.95	1380 24.8	39.3 4.95
TPH by SW8015 Mod	Extracted:	Oct-03-18 07:50	Oct-03-18 07:50	Oct-03-18 07:50	Oct-03-18 07:50	Oct-03-18 07:50	Oct-03-18 07:50
	Analyzed:	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		59.9 14.9	<14.9 14.9	952 15.0	63.4 15.0	97.1 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<14.9 14.9	<14.9 14.9	63.2 15.0	<15.0 15.0	15.9 15.0	<15.0 15.0
Total TPH		59.9 14.9	<14.9 14.9	1020 15.0	63.4 15.0	113 15.0	<15.0 15.0

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 600815

LT Environmental, Inc., Arvada, CO

Project Name: JRU 19



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Sat Sep-29-18 09:00 am

Report Date: 08-OCT-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	600815-013	600815-014	600815-015	600815-016		
	Field Id:	PH08	PH08A	PH09	PH09A		
	Depth:	6- In	1.5- ft	6- In	1.5- ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	Sep-26-18 15:10	Sep-26-18 15:20	Sep-26-18 16:00	Sep-26-18 16:15		
BTEX by EPA 8021B	Extracted:	Oct-05-18 16:45	Oct-05-18 16:45	Oct-05-18 16:45	Oct-05-18 16:45		
	Analyzed:	Oct-06-18 11:17	Oct-06-18 11:39	Oct-06-18 12:00	Oct-06-18 12:21		
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg		
		RL	RL	RL	RL		
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198		
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198		
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198		
m,p-Xylenes		<0.00401 0.00401	<0.00402 0.00402	<0.00398 0.00398	<0.00397 0.00397		
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198		
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198		
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198		
Inorganic Anions by EPA 300	Extracted:	Oct-03-18 08:30	Oct-03-18 08:30	Oct-03-18 08:30	Oct-03-18 08:30		
	Analyzed:	Oct-03-18 11:25	Oct-03-18 11:48	Oct-03-18 11:54	Oct-03-18 12:11		
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg		
		RL	RL	RL	RL		
Chloride		1270 24.8	544 5.03	486 4.95	758 4.95		
TPH by SW8015 Mod	Extracted:	Oct-03-18 07:50	Oct-03-18 07:50	Oct-03-18 07:50	Oct-03-18 07:50		
	Analyzed:	** ** *	** ** *	Oct-03-18 09:34	** ** *		
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg		
		RL	RL	RL	RL		
Gasoline Range Hydrocarbons (GRO)		23.1 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		2210 15.0	78.8 15.0	2520 15.0	54.6 15.0		
Motor Oil Range Hydrocarbons (MRO)		49.6 15.0	<15.0 15.0	89.8 15.0	<15.0 15.0		
Total TPH		2280 15.0	78.8 15.0	2610 15.0	54.6 15.0		

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH01**
Lab Sample Id: 600815-001

Matrix: Soil
Date Collected: 09.26.18 10.50

Date Received: 09.29.18 09.00
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065134

Date Prep: 10.02.18 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	369	4.96	mg/kg	10.03.18 00.44		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065180

Date Prep: 10.03.18 07.50

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.02.18 18.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.02.18 18.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.02.18 18.05	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.02.18 18.05	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	88	%	70-135	10.02.18 18.05	
84-15-1	89	%	70-135	10.02.18 18.05	



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH01**
Lab Sample Id: 600815-001

Matrix: Soil
Date Collected: 09.26.18 10.50

Date Received: 09.29.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.05.18 16.45

Basis: Wet Weight

Seq Number: 3065658

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.06.18 05.36	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.06.18 05.36	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.06.18 05.36	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.06.18 05.36	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.06.18 05.36	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.06.18 05.36	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.06.18 05.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	119	%	70-130	10.06.18 05.36		
4-Bromofluorobenzene	460-00-4	100	%	70-130	10.06.18 05.36		



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH01A**
Lab Sample Id: 600815-002

Matrix: Soil
Date Collected: 09.26.18 10.55

Date Received: 09.29.18 09.00
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065134

Date Prep: 10.02.18 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	373	4.98	mg/kg	10.03.18 01.07		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065180

Date Prep: 10.03.18 07.50

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.02.18 19.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.02.18 19.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.02.18 19.01	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.02.18 19.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.02.18 19.01	
o-Terphenyl	84-15-1	93	%	70-135	10.02.18 19.01	



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH01A**
Lab Sample Id: 600815-002

Matrix: Soil
Date Collected: 09.26.18 10.55

Date Received: 09.29.18 09.00
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065658

Date Prep: 10.05.18 16.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.06.18 05.57	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.06.18 05.57	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.06.18 05.57	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.06.18 05.57	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.06.18 05.57	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.06.18 05.57	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.06.18 05.57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	10.06.18 05.57		
1,4-Difluorobenzene	540-36-3	123	%	70-130	10.06.18 05.57		



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH02** Matrix: Soil Date Received: 09.29.18 09.00
Lab Sample Id: 600815-003 Date Collected: 09.26.18 12.30 Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: SCM % Moisture:
Analyst: SCM Date Prep: 10.03.18 08.30 Basis: Wet Weight
Seq Number: 3065318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	186	4.96	mg/kg	10.03.18 10.11		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 10.03.18 07.50 Basis: Wet Weight
Seq Number: 3065180

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.02.18 19.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.02.18 19.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.02.18 19.20	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.02.18 19.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	10.02.18 19.20	
o-Terphenyl	84-15-1	93	%	70-135	10.02.18 19.20	



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH02**
Lab Sample Id: 600815-003

Matrix: Soil
Date Collected: 09.26.18 12.30

Date Received: 09.29.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.05.18 16.45

Basis: Wet Weight

Seq Number: 3065658

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.06.18 06.18	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.06.18 06.18	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.06.18 06.18	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.06.18 06.18	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.06.18 06.18	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.06.18 06.18	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.06.18 06.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	10.06.18 06.18		
1,4-Difluorobenzene	540-36-3	124	%	70-130	10.06.18 06.18		



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LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH02A**
Lab Sample Id: 600815-004

Matrix: Soil
Date Collected: 09.26.18 12.35

Date Received: 09.29.18 09.00
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065318

Date Prep: 10.03.18 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	214	5.02	mg/kg	10.03.18 10.28		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065180

Date Prep: 10.03.18 07.50

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.02.18 19.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.02.18 19.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.02.18 19.38	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.02.18 19.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.02.18 19.38	
o-Terphenyl	84-15-1	91	%	70-135	10.02.18 19.38	



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH02A**
Lab Sample Id: 600815-004

Matrix: Soil
Date Collected: 09.26.18 12.35

Date Received: 09.29.18 09.00
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065658

Date Prep: 10.05.18 16.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.06.18 06.39	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.06.18 06.39	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.06.18 06.39	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.06.18 06.39	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.06.18 06.39	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.06.18 06.39	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.06.18 06.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	122	%	70-130	10.06.18 06.39		
4-Bromofluorobenzene	460-00-4	97	%	70-130	10.06.18 06.39		



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LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH03**
Lab Sample Id: 600815-005

Matrix: Soil
Date Collected: 09.26.18 12.45

Date Received: 09.29.18 09.00
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3065318

Date Prep: 10.03.18 08.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1910	25.0	mg/kg	10.03.18 10.34		5

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3065180

Date Prep: 10.03.18 07.50

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.02.18 19.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	57.2	14.9	mg/kg	10.02.18 19.57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.02.18 19.57	U	1
Total TPH	PHC635	57.2	14.9	mg/kg	10.02.18 19.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	10.02.18 19.57	
o-Terphenyl	84-15-1	96	%	70-135	10.02.18 19.57	



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH03**
Lab Sample Id: 600815-005

Matrix: Soil
Date Collected: 09.26.18 12.45

Date Received: 09.29.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.05.18 16.45

Basis: Wet Weight

Seq Number: 3065658

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.06.18 07.00	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.06.18 07.00	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.06.18 07.00	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.06.18 07.00	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.06.18 07.00	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.06.18 07.00	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.06.18 07.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	10.06.18 07.00		
1,4-Difluorobenzene	540-36-3	123	%	70-130	10.06.18 07.00		



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH03A**
Lab Sample Id: 600815-006

Matrix: Soil
Date Collected: 09.26.18 12.50

Date Received: 09.29.18 09.00
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065318

Date Prep: 10.03.18 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	212	4.96	mg/kg	10.03.18 10.40		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065180

Date Prep: 10.03.18 07.50

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.02.18 20.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.02.18 20.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.02.18 20.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.02.18 20.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	10.02.18 20.15	
o-Terphenyl	84-15-1	87	%	70-135	10.02.18 20.15	



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH03A**
Lab Sample Id: 600815-006

Matrix: Soil
Date Collected: 09.26.18 12.50

Date Received: 09.29.18 09.00
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065658

Date Prep: 10.05.18 16.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.06.18 07.21	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.06.18 07.21	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.06.18 07.21	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.06.18 07.21	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.06.18 07.21	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.06.18 07.21	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.06.18 07.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	10.06.18 07.21		
1,4-Difluorobenzene	540-36-3	116	%	70-130	10.06.18 07.21		



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH04**
Lab Sample Id: 600815-007

Matrix: Soil
Date Collected: 09.26.18 13.10

Date Received: 09.29.18 09.00
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3065318

Date Prep: 10.03.18 08.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3360	25.0	mg/kg	10.03.18 10.45		5

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3065180

Date Prep: 10.03.18 07.50

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.02.18 20.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	59.9	14.9	mg/kg	10.02.18 20.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.02.18 20.34	U	1
Total TPH	PHC635	59.9	14.9	mg/kg	10.02.18 20.34		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	102	%	70-135	10.02.18 20.34		
o-Terphenyl	84-15-1	108	%	70-135	10.02.18 20.34		



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH04**
Lab Sample Id: 600815-007

Matrix: Soil
Date Collected: 09.26.18 13.10

Date Received: 09.29.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065658

Date Prep: 10.05.18 16.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.06.18 07.44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.06.18 07.44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.06.18 07.44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.06.18 07.44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.06.18 07.44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.06.18 07.44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.06.18 07.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	10.06.18 07.44		
1,4-Difluorobenzene	540-36-3	107	%	70-130	10.06.18 07.44		



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH04A**
Lab Sample Id: 600815-008

Matrix: Soil
Date Collected: 09.26.18 13.15

Date Received: 09.29.18 09.00
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065318

Date Prep: 10.03.18 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	128	4.96	mg/kg	10.03.18 11.02		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065180

Date Prep: 10.03.18 07.50

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.02.18 20.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	10.02.18 20.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.02.18 20.52	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	10.02.18 20.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	10.02.18 20.52	
o-Terphenyl	84-15-1	85	%	70-135	10.02.18 20.52	



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH04A**
Lab Sample Id: 600815-008

Matrix: Soil
Date Collected: 09.26.18 13.15

Date Received: 09.29.18 09.00
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065658

Date Prep: 10.05.18 16.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.06.18 08.06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.06.18 08.06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.06.18 08.06	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.06.18 08.06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.06.18 08.06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.06.18 08.06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.06.18 08.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.06.18 08.06		
1,4-Difluorobenzene	540-36-3	122	%	70-130	10.06.18 08.06		



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH05**
Lab Sample Id: 600815-009

Matrix: Soil
Date Collected: 09.26.18 14.10

Date Received: 09.29.18 09.00
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3065318

Date Prep: 10.03.18 08.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6000	49.8	mg/kg	10.03.18 11.08		10

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3065180

Date Prep: 10.03.18 07.50

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.02.18 21.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	952	15.0	mg/kg	10.02.18 21.11		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	63.2	15.0	mg/kg	10.02.18 21.11		1
Total TPH	PHC635	1020	15.0	mg/kg	10.02.18 21.11		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	89	%	70-135	10.02.18 21.11		
o-Terphenyl	84-15-1	101	%	70-135	10.02.18 21.11		



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH05**
Lab Sample Id: 600815-009

Matrix: Soil
Date Collected: 09.26.18 14.10

Date Received: 09.29.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065658

Date Prep: 10.05.18 16.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.06.18 08.28	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.06.18 08.28	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.06.18 08.28	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.06.18 08.28	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.06.18 08.28	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.06.18 08.28	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.06.18 08.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	10.06.18 08.28		
1,4-Difluorobenzene	540-36-3	130	%	70-130	10.06.18 08.28		



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH05A**
Lab Sample Id: 600815-010

Matrix: Soil
Date Collected: 09.26.18 14.15

Date Received: 09.29.18 09.00
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065318

Date Prep: 10.03.18 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	337	4.95	mg/kg	10.03.18 11.14		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065180

Date Prep: 10.03.18 07.50

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.02.18 21.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	63.4	15.0	mg/kg	10.02.18 21.29		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.02.18 21.29	U	1
Total TPH	PHC635	63.4	15.0	mg/kg	10.02.18 21.29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	10.02.18 21.29	
o-Terphenyl	84-15-1	91	%	70-135	10.02.18 21.29	



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH05A**
Lab Sample Id: 600815-010

Matrix: Soil
Date Collected: 09.26.18 14.15

Date Received: 09.29.18 09.00
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065658

Date Prep: 10.05.18 16.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.06.18 08.49	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.06.18 08.49	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.06.18 08.49	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	10.06.18 08.49	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.06.18 08.49	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.06.18 08.49	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.06.18 08.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	10.06.18 08.49		
1,4-Difluorobenzene	540-36-3	114	%	70-130	10.06.18 08.49		



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH07**
Lab Sample Id: 600815-011

Matrix: Soil
Date Collected: 09.26.18 14.55

Date Received: 09.29.18 09.00
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065318

Date Prep: 10.03.18 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1380	24.8	mg/kg	10.03.18 11.19		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065180

Date Prep: 10.03.18 07.50

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.02.18 22.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	97.1	15.0	mg/kg	10.02.18 22.24		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	15.9	15.0	mg/kg	10.02.18 22.24		1
Total TPH	PHC635	113	15.0	mg/kg	10.02.18 22.24		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.02.18 22.24	
o-Terphenyl	84-15-1	96	%	70-135	10.02.18 22.24	



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH07**
Lab Sample Id: 600815-011

Matrix: Soil
Date Collected: 09.26.18 14.55

Date Received: 09.29.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065658

Date Prep: 10.05.18 16.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.06.18 09.52	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.06.18 09.52	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.06.18 09.52	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.06.18 09.52	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.06.18 09.52	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.06.18 09.52	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.06.18 09.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	10.06.18 09.52		
1,4-Difluorobenzene	540-36-3	114	%	70-130	10.06.18 09.52		



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH07A**
Lab Sample Id: 600815-012

Matrix: Soil
Date Collected: 09.26.18 15.00

Date Received: 09.29.18 09.00
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065318

Date Prep: 10.03.18 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	39.3	4.95	mg/kg	10.03.18 11.31		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065180

Date Prep: 10.03.18 07.50

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.02.18 22.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.02.18 22.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.02.18 22.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.02.18 22.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.02.18 22.43	
o-Terphenyl	84-15-1	92	%	70-135	10.02.18 22.43	



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH07A**
Lab Sample Id: 600815-012

Matrix: Soil
Date Collected: 09.26.18 15.00

Date Received: 09.29.18 09.00
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065658

Date Prep: 10.05.18 16.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.06.18 10.14	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.06.18 10.14	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.06.18 10.14	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.06.18 10.14	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.06.18 10.14	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.06.18 10.14	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.06.18 10.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	10.06.18 10.14		
1,4-Difluorobenzene	540-36-3	115	%	70-130	10.06.18 10.14		



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH08** Matrix: Soil Date Received: 09.29.18 09.00
Lab Sample Id: 600815-013 Date Collected: 09.26.18 15.10 Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: SCM % Moisture:
Analyst: SCM Date Prep: 10.03.18 08.30 Basis: Wet Weight
Seq Number: 3065318

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1270	24.8	mg/kg	10.03.18 11.25		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 10.03.18 07.50 Basis: Wet Weight
Seq Number: 3065180

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	23.1	15.0	mg/kg	10.02.18 23.01		1
Diesel Range Organics (DRO)	C10C28DRO	2210	15.0	mg/kg	10.02.18 23.01		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	49.6	15.0	mg/kg	10.02.18 23.01		1
Total TPH	PHC635	2280	15.0	mg/kg	10.02.18 23.01		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.02.18 23.01	
o-Terphenyl	84-15-1	104	%	70-135	10.02.18 23.01	



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH08**
Lab Sample Id: 600815-013

Matrix: Soil
Date Collected: 09.26.18 15.10

Date Received: 09.29.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.05.18 16.45

Basis: Wet Weight

Seq Number: 3065658

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.06.18 11.17	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.06.18 11.17	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.06.18 11.17	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.06.18 11.17	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.06.18 11.17	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.06.18 11.17	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.06.18 11.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	123	%	70-130	10.06.18 11.17		
4-Bromofluorobenzene	460-00-4	96	%	70-130	10.06.18 11.17		



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH08A**
Lab Sample Id: 600815-014

Matrix: Soil
Date Collected: 09.26.18 15.20

Date Received: 09.29.18 09.00
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3065318

Date Prep: 10.03.18 08.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	544	5.03	mg/kg	10.03.18 11.48		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3065180

Date Prep: 10.03.18 07.50

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.02.18 23.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	78.8	15.0	mg/kg	10.02.18 23.20		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.02.18 23.20	U	1
Total TPH	PHC635	78.8	15.0	mg/kg	10.02.18 23.20		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.02.18 23.20	
o-Terphenyl	84-15-1	97	%	70-135	10.02.18 23.20	



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH08A**
Lab Sample Id: 600815-014

Matrix: Soil
Date Collected: 09.26.18 15.20

Date Received: 09.29.18 09.00
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065658

Date Prep: 10.05.18 16.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.06.18 11.39	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.06.18 11.39	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.06.18 11.39	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.06.18 11.39	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.06.18 11.39	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.06.18 11.39	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.06.18 11.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	89	%	70-130	10.06.18 11.39		
1,4-Difluorobenzene	540-36-3	116	%	70-130	10.06.18 11.39		



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH09**
Lab Sample Id: 600815-015

Matrix: Soil
Date Collected: 09.26.18 16.00

Date Received: 09.29.18 09.00
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065318

Date Prep: 10.03.18 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	486	4.95	mg/kg	10.03.18 11.54		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065180

Date Prep: 10.03.18 07.50

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.03.18 09.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	2520	15.0	mg/kg	10.03.18 09.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	89.8	15.0	mg/kg	10.03.18 09.34		1
Total TPH	PHC635	2610	15.0	mg/kg	10.03.18 09.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	10.03.18 09.34	
o-Terphenyl	84-15-1	109	%	70-135	10.03.18 09.34	



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH09**
Lab Sample Id: 600815-015

Matrix: Soil
Date Collected: 09.26.18 16.00

Date Received: 09.29.18 09.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.05.18 16.45

Basis: Wet Weight

Seq Number: 3065658

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.06.18 12.00	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.06.18 12.00	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.06.18 12.00	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.06.18 12.00	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.06.18 12.00	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.06.18 12.00	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.06.18 12.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	120	%	70-130	10.06.18 12.00		
4-Bromofluorobenzene	460-00-4	93	%	70-130	10.06.18 12.00		



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH09A**
Lab Sample Id: 600815-016

Matrix: Soil
Date Collected: 09.26.18 16.15

Date Received: 09.29.18 09.00
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065318

Date Prep: 10.03.18 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	758	4.95	mg/kg	10.03.18 12.11		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065180

Date Prep: 10.03.18 07.50

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.02.18 23.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	54.6	15.0	mg/kg	10.02.18 23.57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.02.18 23.57	U	1
Total TPH	PHC635	54.6	15.0	mg/kg	10.02.18 23.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.02.18 23.57	
o-Terphenyl	84-15-1	96	%	70-135	10.02.18 23.57	



Certificate of Analytical Results 600815



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH09A**
Lab Sample Id: 600815-016

Matrix: Soil
Date Collected: 09.26.18 16.15

Date Received: 09.29.18 09.00
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065658

Date Prep: 10.05.18 16.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.06.18 12.21	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.06.18 12.21	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.06.18 12.21	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.06.18 12.21	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.06.18 12.21	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.06.18 12.21	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.06.18 12.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	75	%	70-130	10.06.18 12.21		
1,4-Difluorobenzene	540-36-3	124	%	70-130	10.06.18 12.21		

- 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 600815

LT Environmental, Inc.

JRU 19

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065134

MB Sample Id: 7663397-1-BLK

Matrix: Solid

LCS Sample Id: 7663397-1-BKS

Prep Method: E300P

Date Prep: 10.02.18

LCSD Sample Id: 7663397-1-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	266	106	265	106	90-110	0	20	mg/kg	10.02.18 23:19	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065318

MB Sample Id: 7663442-1-BLK

Matrix: Solid

LCS Sample Id: 7663442-1-BKS

Prep Method: E300P

Date Prep: 10.03.18

LCSD Sample Id: 7663442-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.99	250	264	106	264	106	90-110	0	20	mg/kg	10.03.18 10:00	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065134

Parent Sample Id: 600717-012

Matrix: Soil

MS Sample Id: 600717-012 S

Prep Method: E300P

Date Prep: 10.02.18

MSD Sample Id: 600717-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	88.0	249	353	106	356	108	90-110	1	20	mg/kg	10.02.18 23:36	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065134

Parent Sample Id: 600800-003

Matrix: Soil

MS Sample Id: 600800-003 S

Prep Method: E300P

Date Prep: 10.02.18

MSD Sample Id: 600800-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	31.1	251	299	107	299	107	90-110	0	20	mg/kg	10.03.18 00:56	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065318

Parent Sample Id: 600815-003

Matrix: Soil

MS Sample Id: 600815-003 S

Prep Method: E300P

Date Prep: 10.03.18

MSD Sample Id: 600815-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	186	248	443	104	443	104	90-110	0	20	mg/kg	10.03.18 10:17	

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

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

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 600815

LT Environmental, Inc.

JRU 19

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065318

Parent Sample Id: 600815-012

Matrix: Soil

MS Sample Id: 600815-012 S

Prep Method: E300P

Date Prep: 10.03.18

MSD Sample Id: 600815-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	39.3	248	298	104	297	104	90-110	0	20	mg/kg	10.03.18 11:36	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3065180

MB Sample Id: 7663404-1-BLK

Matrix: Solid

LCS Sample Id: 7663404-1-BKS

Prep Method: TX1005P

Date Prep: 10.03.18

LCSD Sample Id: 7663404-1-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	1010	101	951	95	70-135	6	20	mg/kg	10.02.18 17:28	
Diesel Range Organics (DRO)	<8.13	1000	1070	107	989	99	70-135	8	20	mg/kg	10.02.18 17:28	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		123		130		70-135	%	10.02.18 17:28
o-Terphenyl	117		113		107		70-135	%	10.02.18 17:28

Analytical Method: TPH by SW8015 Mod

Seq Number: 3065180

Parent Sample Id: 600815-001

Matrix: Soil

MS Sample Id: 600815-001 S

Prep Method: TX1005P

Date Prep: 10.03.18

MSD Sample Id: 600815-001 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)	11.1	998	881	87	903	89	70-135	2	20	mg/kg	10.02.18 18:24	
Diesel Range Organics (DRO)	<8.11	998	910	91	918	92	70-135	1	20	mg/kg	10.02.18 18:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		118		70-135	%	10.02.18 18:24
o-Terphenyl	91		89		70-135	%	10.02.18 18:24

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

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

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 600815

LT Environmental, Inc.

JRU 19

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065658

MB Sample Id: 7663733-1-BLK

Matrix: Solid

LCS Sample Id: 7663733-1-BKS

Prep Method: SW5030B

Date Prep: 10.05.18

LCSD Sample Id: 7663733-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.116	116	0.114	114	70-130	2	35	mg/kg	10.06.18 03:28	
Toluene	<0.00200	0.0998	0.0994	100	0.103	103	70-130	4	35	mg/kg	10.06.18 03:28	
Ethylbenzene	<0.00200	0.0998	0.112	112	0.113	113	70-130	1	35	mg/kg	10.06.18 03:28	
m,p-Xylenes	<0.00399	0.200	0.226	113	0.233	116	70-130	3	35	mg/kg	10.06.18 03:28	
o-Xylene	<0.00200	0.0998	0.115	115	0.118	118	70-130	3	35	mg/kg	10.06.18 03:28	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		116		125		70-130	%	10.06.18 03:28
4-Bromofluorobenzene	89		102		105		70-130	%	10.06.18 03:28

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065658

Parent Sample Id: 600815-001

Matrix: Soil

MS Sample Id: 600815-001 S

Prep Method: SW5030B

Date Prep: 10.05.18

MSD Sample Id: 600815-001 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	0.0994	99	0.0996	99	70-130	0	35	mg/kg	10.06.18 04:11	
Toluene	<0.00201	0.100	0.0851	85	0.0834	83	70-130	2	35	mg/kg	10.06.18 04:11	
Ethylbenzene	<0.00201	0.100	0.0921	92	0.0930	92	70-130	1	35	mg/kg	10.06.18 04:11	
m,p-Xylenes	<0.00402	0.201	0.185	92	0.182	90	70-130	2	35	mg/kg	10.06.18 04:11	
o-Xylene	<0.00201	0.100	0.0943	94	0.0934	92	70-130	1	35	mg/kg	10.06.18 04:11	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	115		129		70-130	%	10.06.18 04:11
4-Bromofluorobenzene	106		110		70-130	%	10.06.18 04:11

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

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

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

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



Setting the Standard since 1990
Stafford, 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)

CHAIN OF CUSTODY

Page 1 of 2

www.xenco.com

Xenco Quote #

Xenco Job #

000015

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes											
Company Name / Branch: LT Environmental, Inc. - Permian Office Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705 Email: Phone No: Abaker@ltenv.com Project Contact: Adrian Baker Sample's Name		Project Name/Number: SRU 1A Project Location: Carlsbad, NM Invoice To: XTO Energy - Kyle Littlell PO Number: LT# 012418 148		Xenco Quote # Xenco Job #		Matrix Codes											
Field ID / Point of Collection		Collection		Number of preserved bottles		Field Comments											
No.	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX EPA 8020	TPH EPA 8015	Chloride 300.1	
1	PH01	6"	9/27/18	1055	5	1								X	X	X	
2	PH01A	1.5'												X	X	X	
3	PH02	6"		1230										X	X	X	
4	PH02A	1.5'		1235										X	X	X	
5	PH03	6"		1245										X	X	X	
6	PH03A	1.5'		1250										X	X	X	
7	PH04	6"		1310										X	X	X	
8	PH04A	1.5'		1315										X	X	X	
9	PH05	6"		1410										X	X	X	
10	PH05A	1.5'		1415										X	X	X	
Turnaround Time (Business days)		Data Deliverable Information		Notes:													
☐ Same Day TAT		☒ 5 Day TAT		☐ Level II Std QC		☐ Level IV (Full Data Pkg/raw data)											
☐ Next Day EMERGENCY		☐ 7 Day TAT		☐ Level III Std QC+ Forms		☐ TRRP Level IV											
☐ 2 Day EMERGENCY		☐ Contract TAT		☐ Level 3 (CLP Forms)		☐ UST / RG -411											
☐ 3 Day EMERGENCY				☐ TRRP Checklist													
TAT Starts Day received by Lab, if received by 5:00 pm		SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLE CHANGE POSSESSION, INCLUDING CARRIER DELIVERY		FED-EX / UPS Tracking #		7733506093044											
Relinquished by Sampler:		Date Time:		Received By:		Date Time:											
1		9/27/18 10:51		2		9/28/18 15:32											
Relinquished by:		Date Time:		Received By:		Date Time:											
3				4													
Relinquished by:		Date Time:		Received By:		Date Time:											
5				6													
Relinquished by:		Date Time:		Received By:		Date Time:											
On Ice		Cooler Temp.		Thermo. Corr. Factor													

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 cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

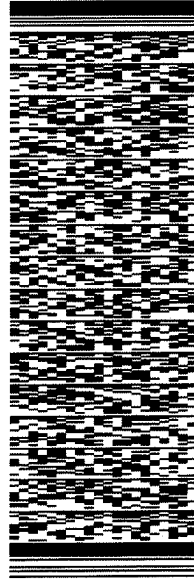
ORIGIN: DCA0A (575) 887-6245
XENCO SATURDAY
PAC N MAIL
910 W PIERCE ST
CARLSBAD, NM 88220
UNITED STATES US

SHIP DATE: 28SEP18
ACTWGT: 5.200 LB
CAD: 101813706/NET 4040
DIMS: 26x14x14 IN
BILL RECIPIENT

TO: HOLD FOR XENCO
FEDEX OFFICE PRINT & SHIP CENTER
FEDEX OFFICE PRINT & SHIP CENTER
200 W INTERSTATE 20

MIDLAND TX 79701
(806) 674-0639
INV: REF: XENCO
PO: DEPT:

552J11/F78C/DCA5

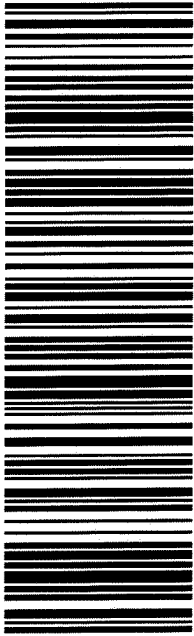


TRK# 7733 5649 3644
0201

SATURDAY HOLD
PRIORITY OVERNIGHT

41 MAFA

HLD
MAFKI
TX-US LBB



After printing this label:

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

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 09/29/2018 09:00:00 AM

Work Order #: 600815

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 10/01/2018

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 10/01/2018

Analytical Report 600982

for
LT Environmental, Inc.

Project Manager: Adrian Baker

JRU 19

08-OCT-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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

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



08-OCT-18

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

Reference: XENCO Report No(s): **600982**
JRU 19
Project Address: Carlsbad, NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 600982. 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. 600982 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
Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

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



Sample Cross Reference 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH10	S	09-27-18 12:30	6 In	600982-001
PH10A	S	09-27-18 12:35	1.5 ft	600982-002
PH11	S	09-27-18 12:50	6 In	600982-003
PH11A	S	09-27-18 12:55	1.5 ft	600982-004
PH12	S	09-27-18 13:15	6 In	600982-005
PH12A	S	09-27-18 13:20	1.5 ft	600982-006
PH13	S	09-27-18 14:45	6 In	600982-007
PH13A	S	09-27-18 14:50	1.5 ft	600982-008
PH14	S	09-27-18 15:00	6 In	600982-009
PH14A	S	09-27-18 15:10	3 ft	600982-010
SS10	S	09-27-18 10:15	1.5 ft	600982-011



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *JRU 19*

Project ID:
Work Order Number(s): 600982

Report Date: 08-OCT-18
Date Received: 10/02/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3065663 BTEX by EPA 8021B

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

Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.

Samples in the analytical batch are: 600817-001, -002, -003, -004, -005, -006, -007

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

Lab Sample ID 600817-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and

Matrix Spike Duplicate. Benzene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 600817-001, -002, -003, -004, -005, -006, -007.

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



Certificate of Analysis Summary 600982

LT Environmental, Inc., Arvada, CO

Project Name: JRU 19



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Tue Oct-02-18 10:17 am

Report Date: 08-OCT-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	600982-001	600982-002	600982-003	600982-004	600982-005	600982-006
	Field Id:	PH10	PH10A	PH11	PH11A	PH12	PH12A
	Depth:	6- In	1.5- ft	6- In	1.5- ft	6- In	1.5- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Sep-27-18 12:30	Sep-27-18 12:35	Sep-27-18 12:50	Sep-27-18 12:55	Sep-27-18 13:15	Sep-27-18 13:20
BTEX by EPA 8021B	Extracted:	Oct-05-18 17:00	Oct-05-18 17:00	Oct-05-18 17:00	Oct-05-18 17:00	Oct-05-18 17:00	Oct-05-18 17:00
	Analyzed:	Oct-05-18 23:06	Oct-06-18 11:26	Oct-06-18 11:46	Oct-06-18 12:06	Oct-06-18 12:26	Oct-06-18 12:46
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Benzene		<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00403 0.00403	<0.00402 0.00402	<0.00398 0.00398	<0.00398 0.00398	<0.00401 0.00401
o-Xylene		<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Inorganic Anions by EPA 300	Extracted:	Oct-03-18 17:00	Oct-03-18 17:00	Oct-03-18 17:00	Oct-03-18 17:00	Oct-03-18 17:00	Oct-03-18 17:00
	Analyzed:	Oct-03-18 19:40	Oct-03-18 20:31	Oct-03-18 20:37	Oct-03-18 20:42	Oct-03-18 20:59	Oct-03-18 20:48
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Chloride		362 4.97	212 4.96	1580 24.8	602 5.01	285 4.95	47.8 4.96
TPH by SW8015 Mod	Extracted:	Oct-04-18 09:00	Oct-04-18 09:00	Oct-04-18 09:00	Oct-04-18 09:00	Oct-04-18 09:00	Oct-04-18 09:00
	Analyzed:	Oct-04-18 11:57	Oct-04-18 12:53	Oct-04-18 13:11	Oct-04-18 13:30	Oct-04-18 13:48	Oct-04-18 14:07
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	711 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	54.5 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<14.9 14.9	766 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 600982

LT Environmental, Inc., Arvada, CO

Project Name: JRU 19



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Tue Oct-02-18 10:17 am

Report Date: 08-OCT-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	600982-007	600982-008	600982-009	600982-010	600982-011	
	Field Id:	PH13	PH13A	PH14	PH14A	SS10	
	Depth:	6- In	1.5- ft	6- In	3- ft	1.5- ft	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Sep-27-18 14:45	Sep-27-18 14:50	Sep-27-18 15:00	Sep-27-18 15:10	Sep-27-18 10:15	
BTEX by EPA 8021B	Extracted:	Oct-05-18 17:00	Oct-05-18 17:00	Oct-05-18 17:00	Oct-05-18 17:00	Oct-05-18 17:00	
	Analyzed:	Oct-06-18 13:06	Oct-06-18 13:26	Oct-06-18 13:46	Oct-06-18 14:07	Oct-06-18 14:27	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	
Toluene		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	
Ethylbenzene		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	
m,p-Xylenes		<0.00403 0.00403	<0.00404 0.00404	<0.00398 0.00398	<0.00399 0.00399	<0.00402 0.00402	
o-Xylene		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	
Total Xylenes		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	
Total BTEX		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	
Inorganic Anions by EPA 300	Extracted:	Oct-03-18 17:00	Oct-03-18 17:00	Oct-03-18 17:00	Oct-03-18 17:00	Oct-03-18 17:00	
	Analyzed:	Oct-03-18 20:54	Oct-03-18 21:16	Oct-03-18 21:22	Oct-03-18 21:39	Oct-03-18 21:45	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		<4.96 4.96	<5.00 5.00	13300 100	160 4.99	712 5.00	
TPH by SW8015 Mod	Extracted:	Oct-04-18 09:00	Oct-04-18 09:00	Oct-04-18 09:00	Oct-04-18 09:00	Oct-04-18 09:00	
	Analyzed:	Oct-04-18 14:25	Oct-04-18 14:44	Oct-04-18 15:02	Oct-04-18 15:21	Oct-04-18 16:17	
	Units/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	<14.9 14.9	
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	43.4 15.0	<15.0 15.0	<14.9 14.9	
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	
Total TPH		<15.0 15.0	<15.0 15.0	43.4 15.0	<15.0 15.0	<14.9 14.9	

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

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH10**
Lab Sample Id: 600982-001

Matrix: Soil
Date Collected: 09.27.18 12.30

Date Received: 10.02.18 10.17
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065351

Date Prep: 10.03.18 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	362	4.97	mg/kg	10.03.18 19.40		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065500

Date Prep: 10.04.18 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.04.18 11.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.04.18 11.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.04.18 11.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.04.18 11.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.04.18 11.57	
o-Terphenyl	84-15-1	93	%	70-135	10.04.18 11.57	



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH10**
Lab Sample Id: 600982-001

Matrix: Soil
Date Collected: 09.27.18 12.30

Date Received: 10.02.18 10.17
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065663

Date Prep: 10.05.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.05.18 23.06	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.05.18 23.06	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.05.18 23.06	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.05.18 23.06	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.05.18 23.06	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.05.18 23.06	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.05.18 23.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	10.05.18 23.06		
4-Bromofluorobenzene	460-00-4	76	%	70-130	10.05.18 23.06		



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH10A**
Lab Sample Id: 600982-002

Matrix: Soil
Date Collected: 09.27.18 12.35

Date Received: 10.02.18 10.17
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065351

Date Prep: 10.03.18 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	212	4.96	mg/kg	10.03.18 20.31		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065500

Date Prep: 10.04.18 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.04.18 12.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	10.04.18 12.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.04.18 12.53	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	10.04.18 12.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	10.04.18 12.53	
o-Terphenyl	84-15-1	97	%	70-135	10.04.18 12.53	



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH10A**
Lab Sample Id: 600982-002

Matrix: Soil
Date Collected: 09.27.18 12.35

Date Received: 10.02.18 10.17
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065663

Date Prep: 10.05.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.06.18 11.26	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.06.18 11.26	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.06.18 11.26	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.06.18 11.26	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.06.18 11.26	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.06.18 11.26	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.06.18 11.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	10.06.18 11.26		
4-Bromofluorobenzene	460-00-4	83	%	70-130	10.06.18 11.26		



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH11**
Lab Sample Id: 600982-003

Matrix: Soil
Date Collected: 09.27.18 12.50

Date Received: 10.02.18 10.17
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065351

Date Prep: 10.03.18 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1580	24.8	mg/kg	10.03.18 20.37		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065500

Date Prep: 10.04.18 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.04.18 13.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	711	15.0	mg/kg	10.04.18 13.11		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	54.5	15.0	mg/kg	10.04.18 13.11		1
Total TPH	PHC635	766	15.0	mg/kg	10.04.18 13.11		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.04.18 13.11	
o-Terphenyl	84-15-1	105	%	70-135	10.04.18 13.11	



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH11**
Lab Sample Id: 600982-003

Matrix: Soil
Date Collected: 09.27.18 12.50

Date Received: 10.02.18 10.17
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.05.18 17.00

Basis: Wet Weight

Seq Number: 3065663

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.06.18 11.46	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.06.18 11.46	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.06.18 11.46	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.06.18 11.46	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.06.18 11.46	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.06.18 11.46	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.06.18 11.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.06.18 11.46		
4-Bromofluorobenzene	460-00-4	90	%	70-130	10.06.18 11.46		



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH11A**
Lab Sample Id: 600982-004

Matrix: Soil
Date Collected: 09.27.18 12.55

Date Received: 10.02.18 10.17
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065351

Date Prep: 10.03.18 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	602	5.01	mg/kg	10.03.18 20.42		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065500

Date Prep: 10.04.18 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.04.18 13.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.04.18 13.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.04.18 13.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.04.18 13.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.04.18 13.30	
o-Terphenyl	84-15-1	95	%	70-135	10.04.18 13.30	



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH11A**
Lab Sample Id: 600982-004

Matrix: Soil
Date Collected: 09.27.18 12.55

Date Received: 10.02.18 10.17
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.05.18 17.00

Basis: Wet Weight

Seq Number: 3065663

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.06.18 12.06	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.06.18 12.06	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.06.18 12.06	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.06.18 12.06	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.06.18 12.06	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.06.18 12.06	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.06.18 12.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	10.06.18 12.06		
4-Bromofluorobenzene	460-00-4	98	%	70-130	10.06.18 12.06		



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH12** Matrix: Soil Date Received: 10.02.18 10.17
Lab Sample Id: 600982-005 Date Collected: 09.27.18 13.15 Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: SCM % Moisture:
Analyst: SCM Date Prep: 10.03.18 17.00 Basis: Wet Weight
Seq Number: 3065351

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	285	4.95	mg/kg	10.03.18 20.59		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 10.04.18 09.00 Basis: Wet Weight
Seq Number: 3065500

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.04.18 13.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.04.18 13.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.04.18 13.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.04.18 13.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	10.04.18 13.48	
o-Terphenyl	84-15-1	100	%	70-135	10.04.18 13.48	



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH12**
Lab Sample Id: 600982-005

Matrix: Soil
Date Collected: 09.27.18 13.15

Date Received: 10.02.18 10.17
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.05.18 17.00

Basis: Wet Weight

Seq Number: 3065663

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.06.18 12.26	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.06.18 12.26	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.06.18 12.26	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.06.18 12.26	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.06.18 12.26	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.06.18 12.26	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.06.18 12.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	10.06.18 12.26		
4-Bromofluorobenzene	460-00-4	76	%	70-130	10.06.18 12.26		



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH12A**
Lab Sample Id: 600982-006

Matrix: Soil
Date Collected: 09.27.18 13.20

Date Received: 10.02.18 10.17
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065351

Date Prep: 10.03.18 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	47.8	4.96	mg/kg	10.03.18 20.48		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065500

Date Prep: 10.04.18 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.04.18 14.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.04.18 14.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.04.18 14.07	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.04.18 14.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.04.18 14.07	
o-Terphenyl	84-15-1	93	%	70-135	10.04.18 14.07	



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH12A**
Lab Sample Id: 600982-006

Matrix: Soil
Date Collected: 09.27.18 13.20

Date Received: 10.02.18 10.17
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065663

Date Prep: 10.05.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.06.18 12.46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.06.18 12.46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.06.18 12.46	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.06.18 12.46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.06.18 12.46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.06.18 12.46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.06.18 12.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	10.06.18 12.46		
4-Bromofluorobenzene	460-00-4	78	%	70-130	10.06.18 12.46		



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH13**
Lab Sample Id: 600982-007

Matrix: Soil
Date Collected: 09.27.18 14.45

Date Received: 10.02.18 10.17
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065351

Date Prep: 10.03.18 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	10.03.18 20.54	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065500

Date Prep: 10.04.18 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.04.18 14.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.04.18 14.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.04.18 14.25	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.04.18 14.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.04.18 14.25	
o-Terphenyl	84-15-1	94	%	70-135	10.04.18 14.25	



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH13**
Lab Sample Id: 600982-007

Matrix: Soil
Date Collected: 09.27.18 14.45

Date Received: 10.02.18 10.17
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.05.18 17.00

Basis: Wet Weight

Seq Number: 3065663

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.06.18 13.06	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.06.18 13.06	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.06.18 13.06	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.06.18 13.06	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.06.18 13.06	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.06.18 13.06	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.06.18 13.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	10.06.18 13.06		
1,4-Difluorobenzene	540-36-3	106	%	70-130	10.06.18 13.06		



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH13A**
Lab Sample Id: 600982-008

Matrix: Soil
Date Collected: 09.27.18 14.50

Date Received: 10.02.18 10.17
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065351

Date Prep: 10.03.18 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	10.03.18 21.16	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065500

Date Prep: 10.04.18 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.04.18 14.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.04.18 14.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.04.18 14.44	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.04.18 14.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.04.18 14.44	
o-Terphenyl	84-15-1	93	%	70-135	10.04.18 14.44	



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH13A**
Lab Sample Id: 600982-008

Matrix: Soil
Date Collected: 09.27.18 14.50

Date Received: 10.02.18 10.17
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065663

Date Prep: 10.05.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.06.18 13.26	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.06.18 13.26	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.06.18 13.26	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	10.06.18 13.26	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.06.18 13.26	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.06.18 13.26	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.06.18 13.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	10.06.18 13.26		
1,4-Difluorobenzene	540-36-3	106	%	70-130	10.06.18 13.26		



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH14** Matrix: Soil Date Received: 10.02.18 10.17
Lab Sample Id: 600982-009 Date Collected: 09.27.18 15.00 Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: SCM % Moisture:
Analyst: SCM Date Prep: 10.03.18 17.00 Basis: Wet Weight
Seq Number: 3065351

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13300	100	mg/kg	10.03.18 21.22		20

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 10.04.18 09.00 Basis: Wet Weight
Seq Number: 3065500

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.04.18 15.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	43.4	15.0	mg/kg	10.04.18 15.02		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.04.18 15.02	U	1
Total TPH	PHC635	43.4	15.0	mg/kg	10.04.18 15.02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.04.18 15.02	
o-Terphenyl	84-15-1	101	%	70-135	10.04.18 15.02	



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH14**
Lab Sample Id: 600982-009

Matrix: Soil
Date Collected: 09.27.18 15.00

Date Received: 10.02.18 10.17
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.05.18 17.00

Basis: Wet Weight

Seq Number: 3065663

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.06.18 13.46	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.06.18 13.46	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.06.18 13.46	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.06.18 13.46	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.06.18 13.46	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.06.18 13.46	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.06.18 13.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	10.06.18 13.46		
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.06.18 13.46		



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH14A**
Lab Sample Id: 600982-010

Matrix: Soil
Date Collected: 09.27.18 15.10

Date Received: 10.02.18 10.17
Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065351

Date Prep: 10.03.18 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	160	4.99	mg/kg	10.03.18 21.39		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065500

Date Prep: 10.04.18 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.04.18 15.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.04.18 15.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.04.18 15.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.04.18 15.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	10.04.18 15.21	
o-Terphenyl	84-15-1	101	%	70-135	10.04.18 15.21	



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **PH14A**
Lab Sample Id: 600982-010

Matrix: Soil
Date Collected: 09.27.18 15.10

Date Received: 10.02.18 10.17
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065663

Date Prep: 10.05.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.06.18 14.07	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.06.18 14.07	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.06.18 14.07	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.06.18 14.07	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.06.18 14.07	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.06.18 14.07	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.06.18 14.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	10.06.18 14.07		
1,4-Difluorobenzene	540-36-3	106	%	70-130	10.06.18 14.07		



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SS10** Matrix: Soil Date Received: 10.02.18 10.17
Lab Sample Id: 600982-011 Date Collected: 09.27.18 10.15 Sample Depth: 1.5 ft
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: SCM % Moisture:
Analyst: SCM Date Prep: 10.03.18 17.00 Basis: Wet Weight
Seq Number: 3065351

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	712	5.00	mg/kg	10.03.18 21.45		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 10.04.18 09.00 Basis: Wet Weight
Seq Number: 3065500

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.04.18 16.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	10.04.18 16.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.04.18 16.17	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	10.04.18 16.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	95	%	70-135	10.04.18 16.17		
o-Terphenyl	84-15-1	101	%	70-135	10.04.18 16.17		



Certificate of Analytical Results 600982



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SS10**
Lab Sample Id: 600982-011

Matrix: Soil
Date Collected: 09.27.18 10.15

Date Received: 10.02.18 10.17
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.05.18 17.00

Basis: Wet Weight

Seq Number: 3065663

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.06.18 14.27	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.06.18 14.27	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.06.18 14.27	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.06.18 14.27	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.06.18 14.27	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.06.18 14.27	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.06.18 14.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	10.06.18 14.27		
4-Bromofluorobenzene	460-00-4	97	%	70-130	10.06.18 14.27		

- 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 600982

LT Environmental, Inc.

JRU 19

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065351

MB Sample Id: 7663484-1-BLK

Matrix: Solid

LCS Sample Id: 7663484-1-BKS

Prep Method: E300P

Date Prep: 10.03.18

LCSD Sample Id: 7663484-1-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	248	99	247	99	90-110	0	20	mg/kg	10.03.18 19:28	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065351

Parent Sample Id: 600982-001

Matrix: Soil

MS Sample Id: 600982-001 S

Prep Method: E300P

Date Prep: 10.03.18

MSD Sample Id: 600982-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	362	249	599	95	596	94	90-110	1	20	mg/kg	10.03.18 19:45	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065351

Parent Sample Id: 600982-005

Matrix: Soil

MS Sample Id: 600982-005 S

Prep Method: E300P

Date Prep: 10.03.18

MSD Sample Id: 600982-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	285	248	527	98	527	98	90-110	0	20	mg/kg	10.03.18 21:05	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3065500

MB Sample Id: 7663575-1-BLK

Matrix: Solid

LCS Sample Id: 7663575-1-BKS

Prep Method: TX1005P

Date Prep: 10.04.18

LCSD Sample Id: 7663575-1-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	987	99	919	92	70-135	7	20	mg/kg	10.04.18 11:20	
Diesel Range Organics (DRO)	<8.13	1000	1020	102	943	94	70-135	8	20	mg/kg	10.04.18 11:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	95		122		114		70-135	%	10.04.18 11:20
o-Terphenyl	101		110		104		70-135	%	10.04.18 11:20

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 600982

LT Environmental, Inc.

JRU 19

Analytical Method: TPH by SW8015 Mod

Seq Number: 3065500

Parent Sample Id: 600982-001

Matrix: Soil

MS Sample Id: 600982-001 S

Prep Method: TX1005P

Date Prep: 10.04.18

MSD Sample Id: 600982-001 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)	8.67	997	855	85	887	88	70-135	4	20	mg/kg	10.04.18 12:16	
Diesel Range Organics (DRO)	<8.10	997	890	89	936	94	70-135	5	20	mg/kg	10.04.18 12:16	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	123		121		70-135	%	10.04.18 12:16
o-Terphenyl	100		104		70-135	%	10.04.18 12:16

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065663

MB Sample Id: 7663735-1-BLK

Matrix: Solid

LCS Sample Id: 7663735-1-BKS

Prep Method: SW5030B

Date Prep: 10.05.18

LCSD Sample Id: 7663735-1-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	0.109	109	0.115	115	70-130	5	35	mg/kg	10.05.18 18:06	
Toluene	<0.00200	0.100	0.107	107	0.114	114	70-130	6	35	mg/kg	10.05.18 18:06	
Ethylbenzene	<0.00200	0.100	0.104	104	0.110	110	70-130	6	35	mg/kg	10.05.18 18:06	
m,p-Xylenes	<0.00400	0.200	0.200	100	0.213	107	70-130	6	35	mg/kg	10.05.18 18:06	
o-Xylene	<0.00200	0.100	0.0937	94	0.106	106	70-130	12	35	mg/kg	10.05.18 18:06	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		96		95		70-130	%	10.05.18 18:06
4-Bromofluorobenzene	93		102		100		70-130	%	10.05.18 18:06

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065663

Parent Sample Id: 600817-001

Matrix: Soil

MS Sample Id: 600817-001 S

Prep Method: SW5030B

Date Prep: 10.05.18

MSD Sample Id: 600817-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0797	79	0.0499	50	70-130	46	35	mg/kg	10.05.18 18:46	XF
Toluene	<0.00202	0.101	0.0638	63	0.0102	10	70-130	145	35	mg/kg	10.05.18 18:46	XF
Ethylbenzene	<0.00202	0.101	0.0472	47	0.00525	5	70-130	160	35	mg/kg	10.05.18 18:46	XF
m,p-Xylenes	<0.00403	0.202	0.0884	44	0.0277	14	70-130	105	35	mg/kg	10.05.18 18:46	XF
o-Xylene	<0.00202	0.101	0.0458	45	0.0258	26	70-130	56	35	mg/kg	10.05.18 18:46	XF

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		110		70-130	%	10.05.18 18:46
4-Bromofluorobenzene	98		103		70-130	%	10.05.18 18:46

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

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

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

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

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

CHAIN OF CUSTODY

Page 1 of 2

www.xenco.com

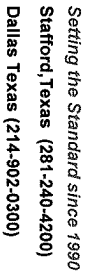
Phoenix, Arizona (480-355-0900)

Xenco Quote #

Xenco Job #

100922

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes				
Company Name / Branch: LT Environmental, Inc. - Permian Office				Project Name/Number: TRU 19				BTEX EPA 8020 TPH EPA 8015 Chloride 800.1				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 OI = Oil WM = Waste Water A = Air				
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705				Project Location: Carlsbad, NM												
Email: Abaker@ltenv.com Project Contact: Adrian Baker				Phone No: (432) 704-5178				Invoice To: XTO Energy - Kyle Littrill								
Sample's Name Permian				PO Number: ITE #012918148												
No.				Field ID / Point of Collection												
				Collection				Number of preserved bottles								
				Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE
1		PH10	6"	9/24/18	1230	S	1									
2		PH10A	1.5'		1235											
3		PH11	6"		1250											
4		PH11A	1.5'		1255											
5		PH12	6"		1315											
6		PH12A	1.5'		1320											
7		PH13	6"		1445											
8		PH13A	1.5'		1450											
9		PH14	6"		1500											
10		PH14A	3'		1510											
Turnaround Time (Business days)				Data Deliverable Information				Notes:								
☐ Same Day TAT				☒ 5 Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg (raw data))				
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC+ Forms				☐ TRRP Level IV				
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG 411				
☐ 3 Day EMERGENCY								☐ TRRP Checklist								
TAT Starts Day received by Lab, if received by 5:00 pm																
Relinquished by Sampler:				SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY								FED-EX / UPS: Tracking # 773309442207				
Relinquished by:				Date Time: 10-1-18				Received By: 1 Brian Thomas				Date Time: 10-2-18				
Relinquished by:				Date Time: 10-15-20				Received By: 3 BOSTON 102				Date Time: 10-17				
Relinquished by:				Date Time: 10-15-20				Received By: 5				Date Time: 10-17				
On Ice				Cooler Temp.				Thermo. Corr. Factor								



Page 2 of 2

www.xenco.com

Phoenix, Arizona (480-355-0900)

Xenco Quote #

Xenco Job #

0009107

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

ORIGIN ID:CAOA (5/5) 887-5245
XENCO
PAC N MAIL
910 W PIERCE ST
CARLSBAD NM 88220
UNITED STATES US

SHIP DATE: 01OCT18
ACTWGT: 37.00 LB
CAD: 101813706INMET4040
DIMS: 26x14x14 IN
BILL RECIPIENT

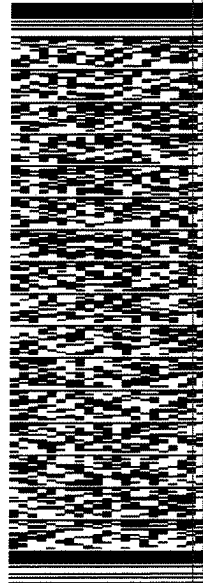
TO HOLD FOR XENCO

FEDEX EXPRESS SHIP CENTER
FEDEX SHIP CENTER
3600 COUNTY RD 1276 S

MIDLAND TX 79711
(800) 794-1296
INV: REF:

DEPT:

552J1188FB/DCA5

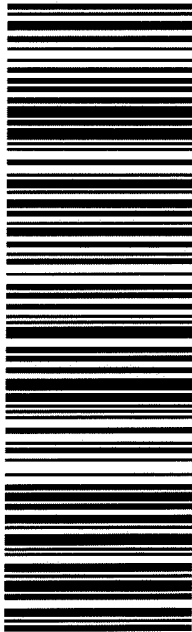


TRK# 7733 6944 2297
0201

TUE - 02 OCT HOLD
STANDARD OVERNIGHT

41 MAFA

HLD
MAFA
TX-US LBB



After printing this label:

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

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 10/02/2018 10:17:00 AM

Work Order #: 600982

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 10/02/2018

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 10/02/2018

Analytical Report 601306

for
LT Environmental, Inc.

Project Manager: Adrian Baker

JRU 19

10-OCT-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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

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



10-OCT-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **601306**

JRU 19

Project Address: Cralsbad,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) 601306. 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. 601306 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

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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



Sample Cross Reference 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	10-02-18 08:55	4 ft	601306-001
FS02	S	10-02-18 09:00	4 ft	601306-002
SW01	S	10-02-18 09:10	2 ft	601306-003
SW02	S	10-02-18 09:15	2 ft	601306-004
SW03	S	10-02-18 09:20	2 ft	601306-005
SW04	S	10-02-18 09:25	2 ft	601306-006
SW05	S	10-02-18 10:00	2 ft	601306-007
SW06	S	10-02-18 10:05	2 ft	601306-008
SW07	S	10-02-18 10:10	2 ft	601306-009
FS03	S	10-02-18 12:10	4 ft	601306-010
SW08	S	10-02-18 12:20	2 ft	601306-011
SS11	S	10-02-18 12:30	2 ft	601306-012



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *JRU 19*

Project ID:
Work Order Number(s): 601306

Report Date: 10-OCT-18
Date Received: 10/04/2018

Sample receipt non conformance and comments:

None

Sample receipt non conformance and comments per sample:

None

Analytical non conformance and comments:

Batch: LBA-3065825 BTEX by EPA 8021B

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

Lab Sample ID 601306-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Toluene recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.

Samples in the analytical batch are: 601306-001.

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

Batch: LBA-3065910 BTEX by EPA 8021B

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



Certificate of Analysis Summary 601306

LT Environmental, Inc., Arvada, CO

Project Name: JRU 19



Project Id:

Contact: Adrian Baker

Project Location: Cralsbad,NM

Date Received in Lab: Thu Oct-04-18 09:39 am

Report Date: 10-OCT-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	601306-001	601306-002	601306-003	601306-004	601306-005	601306-006
	Field Id:	FS01	FS02	SW01	SW02	SW03	SW04
	Depth:	4- ft	4- ft	2- ft	2- ft	2- ft	2- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Oct-02-18 08:55	Oct-02-18 09:00	Oct-02-18 09:10	Oct-02-18 09:15	Oct-02-18 09:20	Oct-02-18 09:25
BTEX by EPA 8021B	Extracted:	Oct-09-18 08:00	Oct-09-18 15:45	Oct-09-18 15:45	Oct-09-18 15:45	Oct-09-18 15:45	Oct-09-18 15:45
	Analyzed:	Oct-09-18 10:16	Oct-10-18 01:45	Oct-10-18 02:06	Oct-10-18 02:28	Oct-10-18 01:23	Oct-10-18 02:50
	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	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00396 0.00396	<0.00403 0.00403	<0.00401 0.00401	<0.00402 0.00402
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
Inorganic Anions by EPA 300	Extracted:	Oct-05-18 08:30	Oct-05-18 11:30	Oct-05-18 11:30	Oct-05-18 11:30	Oct-05-18 11:30	Oct-05-18 11:30
	Analyzed:	Oct-05-18 11:56	Oct-05-18 12:47	Oct-05-18 12:53	Oct-05-18 12:59	Oct-05-18 13:04	Oct-05-18 13:21
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		4210 25.0	6060 49.7	2970 25.2	267 4.99	4850 49.9	2290 24.8
TPH by SW8015 Mod	Extracted:	Oct-05-18 11:00	Oct-05-18 11:00	Oct-05-18 11:00	Oct-05-18 11:00	Oct-05-18 11:00	Oct-05-18 11:00
	Analyzed:	Oct-05-18 18:13	Oct-05-18 18:32	Oct-05-18 18:51	Oct-05-18 19:11	Oct-05-18 19:30	Oct-05-18 19:49
	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	17.1 15.0	<14.9 14.9	<15.0 15.0	<14.9 14.9
Diesel Range Organics (DRO)		55.6 15.0	31.4 15.0	57.1 15.0	65.7 14.9	<15.0 15.0	31.3 14.9
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	36.0 14.9	<15.0 15.0	<14.9 14.9
Total TPH		55.6 15.0	31.4 15.0	74.2 15.0	102 14.9	<15.0 15.0	31.3 14.9

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 601306

LT Environmental, Inc., Arvada, CO

Project Name: JRU 19



Project Id:

Contact: Adrian Baker

Project Location: Cralsbad,NM

Date Received in Lab: Thu Oct-04-18 09:39 am

Report Date: 10-OCT-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	601306-007	601306-008	601306-009	601306-010	601306-011	601306-012
	Field Id:	SW05	SW06	SW07	FS03	SW08	SS11
	Depth:	2- ft	2- ft	2- ft	4- ft	2- ft	2- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Oct-02-18 10:00	Oct-02-18 10:05	Oct-02-18 10:10	Oct-02-18 12:10	Oct-02-18 12:20	Oct-02-18 12:30
BTEX by EPA 8021B	Extracted:	Oct-09-18 15:45	Oct-09-18 15:45	Oct-09-18 15:45	Oct-09-18 15:45	Oct-09-18 15:45	Oct-09-18 15:45
	Analyzed:	Oct-09-18 22:33	Oct-09-18 22:54	Oct-09-18 23:16	Oct-09-18 23:37	Oct-09-18 23:58	Oct-10-18 00:20
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199
m,p-Xylenes		<0.00398 0.00398	<0.00399 0.00399	<0.00402 0.00402	<0.00402 0.00402	<0.00404 0.00404	<0.00398 0.00398
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199
Inorganic Anions by EPA 300	Extracted:	Oct-05-18 11:30	Oct-05-18 11:30	Oct-05-18 11:30	Oct-05-18 11:30	Oct-05-18 11:30	Oct-05-18 11:30
	Analyzed:	Oct-05-18 13:27	Oct-05-18 13:33	Oct-05-18 13:38	Oct-05-18 13:44	Oct-05-18 14:07	Oct-05-18 14:12
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1000 4.98	2610 24.8	498 4.98	1760 25.0	8130 50.1	2100 24.8
TPH by SW8015 Mod	Extracted:	Oct-05-18 17:00	Oct-05-18 17:00	Oct-05-18 17:00	Oct-05-18 17:00	Oct-05-18 17:00	Oct-05-18 17:00
	Analyzed:	Oct-06-18 11:40	Oct-06-18 12:35	Oct-06-18 12:54	Oct-06-18 13:12	Oct-06-18 13:31	Oct-06-18 13:49
	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	<14.9 14.9	<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	188 14.9	84.0 14.9	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	30.2 14.9	<14.9 14.9	<15.0 15.0
Total TPH		<15.0 15.0	<14.9 14.9	<15.0 15.0	218 14.9	84.0 14.9	<15.0 15.0

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **FS01**
Lab Sample Id: 601306-001

Matrix: Soil
Date Collected: 10.02.18 08.55

Date Received: 10.04.18 09.39
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3065622

Date Prep: 10.05.18 08.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4210	25.0	mg/kg	10.05.18 11.56		5

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3065664

Date Prep: 10.05.18 11.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.05.18 18.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	55.6	15.0	mg/kg	10.05.18 18.13		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.05.18 18.13	U	1
Total TPH	PHC635	55.6	15.0	mg/kg	10.05.18 18.13		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.05.18 18.13	
o-Terphenyl	84-15-1	95	%	70-135	10.05.18 18.13	



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **FS01**
Lab Sample Id: 601306-001

Matrix: Soil
Date Collected: 10.02.18 08.55

Date Received: 10.04.18 09.39
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065825

Date Prep: 10.09.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.09.18 10.16	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.09.18 10.16	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.09.18 10.16	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.09.18 10.16	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.09.18 10.16	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.09.18 10.16	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.09.18 10.16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	10.09.18 10.16		
1,4-Difluorobenzene	540-36-3	116	%	70-130	10.09.18 10.16		



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LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **FS02**
Lab Sample Id: 601306-002

Matrix: Soil
Date Collected: 10.02.18 09.00

Date Received: 10.04.18 09.39
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065631

Date Prep: 10.05.18 11.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6060	49.7	mg/kg	10.05.18 12.47		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065664

Date Prep: 10.05.18 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.05.18 18.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	31.4	15.0	mg/kg	10.05.18 18.32		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.05.18 18.32	U	1
Total TPH	PHC635	31.4	15.0	mg/kg	10.05.18 18.32		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.05.18 18.32	
o-Terphenyl	84-15-1	95	%	70-135	10.05.18 18.32	



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LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **FS02**
Lab Sample Id: 601306-002

Matrix: Soil
Date Collected: 10.02.18 09.00

Date Received: 10.04.18 09.39
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065910

Date Prep: 10.09.18 15.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.10.18 01.45	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.10.18 01.45	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.10.18 01.45	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.10.18 01.45	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.10.18 01.45	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.10.18 01.45	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.10.18 01.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	10.10.18 01.45		
1,4-Difluorobenzene	540-36-3	113	%	70-130	10.10.18 01.45		



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LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SW01** Matrix: Soil Date Received: 10.04.18 09.39
Lab Sample Id: 601306-003 Date Collected: 10.02.18 09.10 Sample Depth: 2 ft
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: SCM % Moisture:
Analyst: SCM Date Prep: 10.05.18 11.30 Basis: Wet Weight
Seq Number: 3065631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2970	25.2	mg/kg	10.05.18 12.53		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 10.05.18 11.00 Basis: Wet Weight
Seq Number: 3065664

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	17.1	15.0	mg/kg	10.05.18 18.51		1
Diesel Range Organics (DRO)	C10C28DRO	57.1	15.0	mg/kg	10.05.18 18.51		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.05.18 18.51	U	1
Total TPH	PHC635	74.2	15.0	mg/kg	10.05.18 18.51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	10.05.18 18.51	
o-Terphenyl	84-15-1	92	%	70-135	10.05.18 18.51	



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SW01**
Lab Sample Id: 601306-003

Matrix: Soil
Date Collected: 10.02.18 09.10

Date Received: 10.04.18 09.39
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065910

Date Prep: 10.09.18 15.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.10.18 02.06	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.10.18 02.06	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.10.18 02.06	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	10.10.18 02.06	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.10.18 02.06	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.10.18 02.06	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.10.18 02.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	10.10.18 02.06		
4-Bromofluorobenzene	460-00-4	100	%	70-130	10.10.18 02.06		



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SW02**
Lab Sample Id: 601306-004

Matrix: Soil
Date Collected: 10.02.18 09.15

Date Received: 10.04.18 09.39
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3065631

Date Prep: 10.05.18 11.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	267	4.99	mg/kg	10.05.18 12.59		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3065664

Date Prep: 10.05.18 11.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.05.18 19.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	65.7	14.9	mg/kg	10.05.18 19.11		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	36.0	14.9	mg/kg	10.05.18 19.11		1
Total TPH	PHC635	102	14.9	mg/kg	10.05.18 19.11		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.05.18 19.11	
o-Terphenyl	84-15-1	96	%	70-135	10.05.18 19.11	



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SW02**
Lab Sample Id: 601306-004

Matrix: Soil
Date Collected: 10.02.18 09.15

Date Received: 10.04.18 09.39
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065910

Date Prep: 10.09.18 15.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.10.18 02.28	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.10.18 02.28	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.10.18 02.28	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.10.18 02.28	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.10.18 02.28	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.10.18 02.28	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.10.18 02.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	10.10.18 02.28		
4-Bromofluorobenzene	460-00-4	100	%	70-130	10.10.18 02.28		



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SW03** Matrix: Soil Date Received: 10.04.18 09.39
Lab Sample Id: 601306-005 Date Collected: 10.02.18 09.20 Sample Depth: 2 ft
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: SCM % Moisture:
Analyst: SCM Date Prep: 10.05.18 11.30 Basis: Wet Weight
Seq Number: 3065631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4850	49.9	mg/kg	10.05.18 13.04		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 10.05.18 11.00 Basis: Wet Weight
Seq Number: 3065664

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.05.18 19.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.05.18 19.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.05.18 19.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.05.18 19.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	10.05.18 19.30	
o-Terphenyl	84-15-1	93	%	70-135	10.05.18 19.30	



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SW03**
Lab Sample Id: 601306-005

Matrix: Soil
Date Collected: 10.02.18 09.20

Date Received: 10.04.18 09.39
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065910

Date Prep: 10.09.18 15.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.10.18 01.23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.10.18 01.23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.10.18 01.23	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.10.18 01.23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.10.18 01.23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.10.18 01.23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.10.18 01.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	10.10.18 01.23		
4-Bromofluorobenzene	460-00-4	96	%	70-130	10.10.18 01.23		



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SW04** Matrix: Soil Date Received: 10.04.18 09.39
Lab Sample Id: 601306-006 Date Collected: 10.02.18 09.25 Sample Depth: 2 ft
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: SCM % Moisture:
Analyst: SCM Date Prep: 10.05.18 11.30 Basis: Wet Weight
Seq Number: 3065631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2290	24.8	mg/kg	10.05.18 13.21		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 10.05.18 11.00 Basis: Wet Weight
Seq Number: 3065664

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.05.18 19.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	31.3	14.9	mg/kg	10.05.18 19.49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.05.18 19.49	U	1
Total TPH	PHC635	31.3	14.9	mg/kg	10.05.18 19.49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.05.18 19.49	
o-Terphenyl	84-15-1	96	%	70-135	10.05.18 19.49	



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SW04**
Lab Sample Id: 601306-006

Matrix: Soil
Date Collected: 10.02.18 09.25

Date Received: 10.04.18 09.39
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065910

Date Prep: 10.09.18 15.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.10.18 02.50	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.10.18 02.50	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.10.18 02.50	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.10.18 02.50	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.10.18 02.50	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.10.18 02.50	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.10.18 02.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	10.10.18 02.50		
1,4-Difluorobenzene	540-36-3	112	%	70-130	10.10.18 02.50		



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LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SW05**
Lab Sample Id: 601306-007

Matrix: Soil
Date Collected: 10.02.18 10.00

Date Received: 10.04.18 09.39
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065631

Date Prep: 10.05.18 11.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1000	4.98	mg/kg	10.05.18 13.27		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065672

Date Prep: 10.05.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.06.18 11.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.06.18 11.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.06.18 11.40	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.06.18 11.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	10.06.18 11.40	
o-Terphenyl	84-15-1	102	%	70-135	10.06.18 11.40	



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SW05**
Lab Sample Id: 601306-007

Matrix: Soil
Date Collected: 10.02.18 10.00

Date Received: 10.04.18 09.39
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065910

Date Prep: 10.09.18 15.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.09.18 22.33	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.09.18 22.33	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.09.18 22.33	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.09.18 22.33	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.09.18 22.33	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.09.18 22.33	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.09.18 22.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	10.09.18 22.33		
4-Bromofluorobenzene	460-00-4	98	%	70-130	10.09.18 22.33		



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SW06**
Lab Sample Id: 601306-008

Matrix: Soil
Date Collected: 10.02.18 10.05

Date Received: 10.04.18 09.39
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065631

Date Prep: 10.05.18 11.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2610	24.8	mg/kg	10.05.18 13.33		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065672

Date Prep: 10.05.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.06.18 12.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	10.06.18 12.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.06.18 12.35	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	10.06.18 12.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.06.18 12.35	
o-Terphenyl	84-15-1	99	%	70-135	10.06.18 12.35	



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SW06**
Lab Sample Id: 601306-008

Matrix: Soil
Date Collected: 10.02.18 10.05

Date Received: 10.04.18 09.39
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065910

Date Prep: 10.09.18 15.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.09.18 22.54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.09.18 22.54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.09.18 22.54	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.09.18 22.54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.09.18 22.54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.09.18 22.54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.09.18 22.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.09.18 22.54		
1,4-Difluorobenzene	540-36-3	104	%	70-130	10.09.18 22.54		



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SW07**
Lab Sample Id: 601306-009

Matrix: Soil
Date Collected: 10.02.18 10.10

Date Received: 10.04.18 09.39
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065631

Date Prep: 10.05.18 11.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	498	4.98	mg/kg	10.05.18 13.38		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065672

Date Prep: 10.05.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.06.18 12.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.06.18 12.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.06.18 12.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.06.18 12.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.06.18 12.54	
o-Terphenyl	84-15-1	99	%	70-135	10.06.18 12.54	



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SW07**
Lab Sample Id: 601306-009

Matrix: Soil
Date Collected: 10.02.18 10.10

Date Received: 10.04.18 09.39
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065910

Date Prep: 10.09.18 15.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.09.18 23.16	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.09.18 23.16	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.09.18 23.16	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.09.18 23.16	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.09.18 23.16	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.09.18 23.16	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.09.18 23.16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	10.09.18 23.16		
1,4-Difluorobenzene	540-36-3	128	%	70-130	10.09.18 23.16		



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **FS03** Matrix: Soil Date Received: 10.04.18 09.39
Lab Sample Id: 601306-010 Date Collected: 10.02.18 12.10 Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: SCM % Moisture:
Analyst: SCM Date Prep: 10.05.18 11.30 Basis: Wet Weight
Seq Number: 3065631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1760	25.0	mg/kg	10.05.18 13.44		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 10.05.18 17.00 Basis: Wet Weight
Seq Number: 3065672

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.06.18 13.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	188	14.9	mg/kg	10.06.18 13.12		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	30.2	14.9	mg/kg	10.06.18 13.12		1
Total TPH	PHC635	218	14.9	mg/kg	10.06.18 13.12		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.06.18 13.12	
o-Terphenyl	84-15-1	110	%	70-135	10.06.18 13.12	



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **FS03**
Lab Sample Id: 601306-010

Matrix: Soil
Date Collected: 10.02.18 12.10

Date Received: 10.04.18 09.39
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.09.18 15.45

Basis: Wet Weight

Seq Number: 3065910

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.09.18 23.37	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.09.18 23.37	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.09.18 23.37	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.09.18 23.37	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.09.18 23.37	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.09.18 23.37	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.09.18 23.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	10.09.18 23.37		
1,4-Difluorobenzene	540-36-3	113	%	70-130	10.09.18 23.37		



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SW08**
Lab Sample Id: 601306-011

Matrix: Soil
Date Collected: 10.02.18 12.20

Date Received: 10.04.18 09.39
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3065631

Date Prep: 10.05.18 11.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8130	50.1	mg/kg	10.05.18 14.07		10

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3065672

Date Prep: 10.05.18 17.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.06.18 13.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	84.0	14.9	mg/kg	10.06.18 13.31		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.06.18 13.31	U	1
Total TPH	PHC635	84.0	14.9	mg/kg	10.06.18 13.31		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	93	%	70-135	10.06.18 13.31		
o-Terphenyl	84-15-1	103	%	70-135	10.06.18 13.31		



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SW08**
Lab Sample Id: 601306-011

Matrix: Soil
Date Collected: 10.02.18 12.20

Date Received: 10.04.18 09.39
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065910

Date Prep: 10.09.18 15.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.09.18 23.58	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.09.18 23.58	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.09.18 23.58	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	10.09.18 23.58	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.09.18 23.58	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.09.18 23.58	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.09.18 23.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	10.09.18 23.58		
1,4-Difluorobenzene	540-36-3	106	%	70-130	10.09.18 23.58		



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: **SS11**
Lab Sample Id: 601306-012

Matrix: Soil
Date Collected: 10.02.18 12.30

Date Received: 10.04.18 09.39
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3065631

Date Prep: 10.05.18 11.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2100	24.8	mg/kg	10.05.18 14.12		5

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3065672

Date Prep: 10.05.18 17.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.06.18 13.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.06.18 13.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.06.18 13.49	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.06.18 13.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	96	%	70-135	10.06.18 13.49		
o-Terphenyl	84-15-1	101	%	70-135	10.06.18 13.49		



Certificate of Analytical Results 601306



LT Environmental, Inc., Arvada, CO

JRU 19

Sample Id: SS11
Lab Sample Id: 601306-012

Matrix: Soil
Date Collected: 10.02.18 12.30

Date Received: 10.04.18 09.39
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.09.18 15.45

Basis: Wet Weight

Seq Number: 3065910

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.10.18 00.20	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.10.18 00.20	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.10.18 00.20	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.10.18 00.20	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.10.18 00.20	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.10.18 00.20	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.10.18 00.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	10.10.18 00.20		
4-Bromofluorobenzene	460-00-4	100	%	70-130	10.10.18 00.20		

- 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 601306

LT Environmental, Inc.

JRU 19

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065622

MB Sample Id: 7663581-1-BLK

Matrix: Solid

LCS Sample Id: 7663581-1-BKS

Prep Method: E300P

Date Prep: 10.05.18

LCSD Sample Id: 7663581-1-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	252	101	252	101	90-110	0	20	mg/kg	10.05.18 09:12	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065631

MB Sample Id: 7663626-1-BLK

Matrix: Solid

LCS Sample Id: 7663626-1-BKS

Prep Method: E300P

Date Prep: 10.05.18

LCSD Sample Id: 7663626-1-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	250	100	249	100	90-110	0	20	mg/kg	10.05.18 12:19	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065622

Parent Sample Id: 601287-001

Matrix: Soil

MS Sample Id: 601287-001 S

Prep Method: E300P

Date Prep: 10.05.18

MSD Sample Id: 601287-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.896	261	263	101	265	102	90-110	1	20	mg/kg	10.05.18 09:29	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065622

Parent Sample Id: 601287-003

Matrix: Soil

MS Sample Id: 601287-003 S

Prep Method: E300P

Date Prep: 10.05.18

MSD Sample Id: 601287-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	77.9	300	394	105	394	105	90-110	0	20	mg/kg	10.05.18 10:48	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065631

Parent Sample Id: 601307-001

Matrix: Soil

MS Sample Id: 601307-001 S

Prep Method: E300P

Date Prep: 10.05.18

MSD Sample Id: 601307-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	193	248	441	100	444	101	90-110	1	20	mg/kg	10.05.18 12:36	

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

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

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 601306

LT Environmental, Inc.

JRU 19

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065631

Parent Sample Id: 601307-003

Matrix: Soil

MS Sample Id: 601307-003 S

Prep Method: E300P

Date Prep: 10.05.18

MSD Sample Id: 601307-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10.0	249	267	103	274	106	90-110	3	20	mg/kg	10.05.18 13:55	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3065664

MB Sample Id: 7663662-1-BLK

Matrix: Solid

LCS Sample Id: 7663662-1-BKS

Prep Method: TX1005P

Date Prep: 10.05.18

LCSD Sample Id: 7663662-1-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	994	99	938	94	70-135	6	20	mg/kg	10.05.18 11:21	
Diesel Range Organics (DRO)	<8.13	1000	1070	107	1000	100	70-135	7	20	mg/kg	10.05.18 11:21	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		125		111		70-135	%	10.05.18 11:21
o-Terphenyl	103		110		101		70-135	%	10.05.18 11:21

Analytical Method: TPH by SW8015 Mod

Seq Number: 3065672

MB Sample Id: 7663668-1-BLK

Matrix: Solid

LCS Sample Id: 7663668-1-BKS

Prep Method: TX1005P

Date Prep: 10.05.18

LCSD Sample Id: 7663668-1-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	1020	102	952	95	70-135	7	20	mg/kg	10.06.18 11:02	
Diesel Range Organics (DRO)	<8.13	1000	1030	103	927	93	70-135	11	20	mg/kg	10.06.18 11:02	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		124		114		70-135	%	10.06.18 11:02
o-Terphenyl	99		112		104		70-135	%	10.06.18 11:02

Analytical Method: TPH by SW8015 Mod

Seq Number: 3065664

Parent Sample Id: 601287-001

Matrix: Soil

MS Sample Id: 601287-001 S

Prep Method: TX1005P

Date Prep: 10.05.18

MSD Sample Id: 601287-001 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)	<8.39	1050	937	89	926	88	70-135	1	20	mg/kg	10.05.18 12:19	
Diesel Range Organics (DRO)	<8.53	1050	1050	100	1060	101	70-135	1	20	mg/kg	10.05.18 12:19	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		108		70-135	%	10.05.18 12:19
o-Terphenyl	103		100		70-135	%	10.05.18 12:19

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

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

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 601306

LT Environmental, Inc.

JRU 19

Analytical Method: TPH by SW8015 Mod

Seq Number: 3065672

Parent Sample Id: 601306-007

Matrix: Soil

MS Sample Id: 601306-007 S

Prep Method: TX1005P

Date Prep: 10.05.18

MSD Sample Id: 601306-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	930	93	960	96	70-135	3	20	mg/kg	10.06.18 11:58	
Diesel Range Organics (DRO)	<8.12	999	932	93	973	97	70-135	4	20	mg/kg	10.06.18 11:58	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		119		70-135	%	10.06.18 11:58
o-Terphenyl	102		110		70-135	%	10.06.18 11:58

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065825

MB Sample Id: 7663819-1-BLK

Matrix: Solid

LCS Sample Id: 7663819-1-BKS

Prep Method: SW5030B

Date Prep: 10.09.18

LCSD Sample Id: 7663819-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.111	111	0.103	103	70-130	7	35	mg/kg	10.09.18 08:09	
Toluene	<0.00201	0.100	0.0974	97	0.0908	91	70-130	7	35	mg/kg	10.09.18 08:09	
Ethylbenzene	<0.00201	0.100	0.115	115	0.106	106	70-130	8	35	mg/kg	10.09.18 08:09	
m,p-Xylenes	<0.00402	0.201	0.230	114	0.210	105	70-130	9	35	mg/kg	10.09.18 08:09	
o-Xylene	<0.00201	0.100	0.116	116	0.106	106	70-130	9	35	mg/kg	10.09.18 08:09	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		112		119		70-130	%	10.09.18 08:09
4-Bromofluorobenzene	90		98		100		70-130	%	10.09.18 08:09

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065910

MB Sample Id: 7663826-1-BLK

Matrix: Solid

LCS Sample Id: 7663826-1-BKS

Prep Method: SW5030B

Date Prep: 10.09.18

LCSD Sample Id: 7663826-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.109	109	0.109	108	70-130	0	35	mg/kg	10.09.18 19:00	
Toluene	<0.00201	0.100	0.0997	100	0.0983	97	70-130	1	35	mg/kg	10.09.18 19:00	
Ethylbenzene	<0.00201	0.100	0.118	118	0.116	115	70-130	2	35	mg/kg	10.09.18 19:00	
m,p-Xylenes	<0.00402	0.201	0.235	117	0.233	115	70-130	1	35	mg/kg	10.09.18 19:00	
o-Xylene	<0.00201	0.100	0.119	119	0.117	116	70-130	2	35	mg/kg	10.09.18 19:00	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		103		106		70-130	%	10.09.18 19:00
4-Bromofluorobenzene	88		111		103		70-130	%	10.09.18 19:00

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

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

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 601306

LT Environmental, Inc.

JRU 19

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065825

Parent Sample Id: 601306-001

Matrix: Soil

MS Sample Id: 601306-001 S

Prep Method: SW5030B

Date Prep: 10.09.18

MSD Sample Id: 601306-001 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	0.0742	74	0.0874	88	70-130	16	35	mg/kg	10.09.18 08:51	
Toluene	<0.00199	0.0996	0.0682	68	0.0783	78	70-130	14	35	mg/kg	10.09.18 08:51	X
Ethylbenzene	<0.00199	0.0996	0.0775	78	0.0889	89	70-130	14	35	mg/kg	10.09.18 08:51	
m,p-Xylenes	<0.00398	0.199	0.141	71	0.165	83	70-130	16	35	mg/kg	10.09.18 08:51	
o-Xylene	<0.00199	0.0996	0.0766	77	0.0887	89	70-130	15	35	mg/kg	10.09.18 08:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	119		114		70-130	%	10.09.18 08:51
4-Bromofluorobenzene	111		114		70-130	%	10.09.18 08:51

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065910

Parent Sample Id: 601307-021

Matrix: Soil

MS Sample Id: 601307-021 S

Prep Method: SW5030B

Date Prep: 10.09.18

MSD Sample Id: 601307-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0681	67	0.0683	68	70-130	0	35	mg/kg	10.09.18 19:43	X
Toluene	<0.00202	0.101	0.0607	60	0.0632	63	70-130	4	35	mg/kg	10.09.18 19:43	X
Ethylbenzene	<0.00202	0.101	0.0624	62	0.0675	67	70-130	8	35	mg/kg	10.09.18 19:43	X
m,p-Xylenes	<0.00403	0.202	0.117	58	0.125	62	70-130	7	35	mg/kg	10.09.18 19:43	X
o-Xylene	<0.00202	0.101	0.0619	61	0.0662	66	70-130	7	35	mg/kg	10.09.18 19:43	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		108		70-130	%	10.09.18 19:43
4-Bromofluorobenzene	108		107		70-130	%	10.09.18 19:43

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

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

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

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



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

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

www.xenco.com

Phoenix, Arizona (480-355-0900)

CHAIN OF CUSTODY

Page 1 of 2

Client / Reporting Information

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

Project Information

Project Name/Number:
SRU19
Project Location:
Carlsbad, NM
Invoice To:
XTO Energy - Kyle Littrell
PO Number:
288-46980

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

No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Notes
1	FS01	4'	10/2/18	0855	S	1									
2	FS02	4'		0900	S	1									
3	SW01	2'		0910	S	1									
4	SW02	2'		0915	S	1									
5	SW03	2'		0920	S	1									
6	SW04	2'		0925	S	1									
7	SW05	2'		1000	S	1									
8	SW06	2'		1005	S	1									
9	SW07	2'		1010	S	1									
10	PS03	4'		1210	S	1									

Field Comments

Composite Samples

Same Day TAT

☒ 5 Day TAT

Next Day EMERGENCY

☐ 7 Day TAT

2 Day EMERGENCY

☐ Contract TAT

3 Day EMERGENCY

☐ TRRP Checklist

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

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

Relinquished by Sampler:

Relinquished by:

Relinquished by:

Relinquished by:

Date Time: 10/2/18 17:25

Date Time: 10/2/18 17:25

Date Time: 10/2/18 17:25

Date Time: 10/2/18 17:25

Received By: [Signature]

Received By: [Signature]

Received By: [Signature]

Received By: [Signature]

Relinquished By: [Signature]

Relinquished By: [Signature]

Relinquished By: [Signature]

Relinquished By: [Signature]

Date Time: 10/3/18 15:30

Date Time: 10/3/18 15:30

Date Time: 10/3/18 15:30

Date Time: 10/3/18 15:30

Received By: [Signature]

Received By: [Signature]

Received By: [Signature]

Received By: [Signature]

Received By: [Signature]

Received By: [Signature]

Received By: [Signature]

Received By: [Signature]

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



Phoenix, Arizona (480-355-0900)

Xenco Job #

601304

Client / Reporting Information						Project Information								Analytical Information							Matrix Codes					
Company Name / Branch: LT Environmental, Inc. - Permian Office						Project Name/Number: SR01A																				
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705						Project Location: Cutsheden, NM																				
Email: Abaker@ltenv.com Adrian Baker						Invoice To: XTO Energy - Kyle Littlell																				
Phone No: (432) 704-5178																										
Samplers Name Bern Belin						PO Number: 2KRP-49880																				
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX EPA 8020 TPH EPA 8015 Chlorides 300.1											
1		SW08	10/6/18	1200	S	1									X											
2		SSU1	2' ↓	1230	S	1									X											
3															X											
4															X											
5															X											
6															X											
7															X											
8															X											
9															X											
10															X											
Turnaround Time (Business days)						Data Deliverable Information										Notes:										
☐ Same Day TAT						☒ 5 Day TAT										☐ Level II Std QC							☐ Level IV (Full Data Pkg /raw data)			
☐ Next Day EMERGENCY						☐ 7 Day TAT										☐ Level III Std QC+ Forms							☐ TRRP Level IV			
☐ 2 Day EMERGENCY						☐ Contract TAT										☐ Level 3 (CLP Forms)							☐ UST / RG-411			
☐ 3 Day EMERGENCY																☐ TRRP Checklist										
TAT Starts Day received by Lab, if received by 5:00 pm						SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLE CHANGE POSSESSION, INCLUDING COURIER DELIVERY										FED-EX / UPS: Tracking # 773394179051										
Relinquished by Sampler: BOEL						Date Time: 10/2/17.45		Received By: [Signature]		Date Time: 10/2/17.45		Relinquished By: [Signature]		Date Time: 10/2/17.45		Received By: [Signature]										
Relinquished by:						Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:										
Relinquished by:						Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:										
On Ice						Cooler Temp.		Thermo.		Corr. Factor																

ORIGIN D:CA0A (575) 887-6245
XENCO
PAC N MAIL
910 W PIERCE ST
CARLSBAD NM 88220
UNITED STATES US

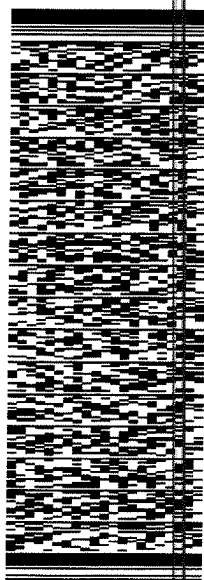
SHIP DATE: 03OCT18
ACTWGT: 42.00 LB
CAD: 10/18/13/06/NET/4040
DIMS: 26x14x14 IN
BILL RECIPIENT

TO HOLD FOR XENCO

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FEDEX SHIP CENTER
3600 COUNTY RD 1276 S

MIDLAND TX 79711
(806) 794-1236
INV. REF:
PO. DEPT:

552J1188FB/DCA5

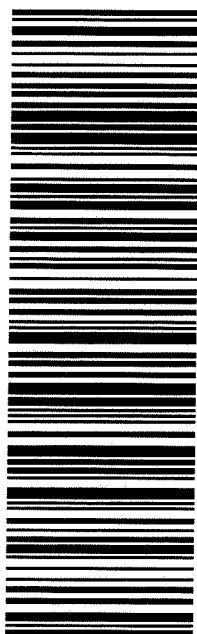


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THU - 04 OCT HOLD
STANDARD OVERNIGHT

41 MAFA

HLD
MAFA
TX-US LBB



After printing this label:

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

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 10/04/2018 09:39:00 AM

Work Order #: 601306

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 10/04/2018

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 10/04/2018

Analytical Report 601307

for
LT Environmental, Inc.

Project Manager: Adrian Baker

JRU-19

10-OCT-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

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

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

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



10-OCT-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **601307**

JRU-19

Project Address: Cralsbad,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) 601307. 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. 601307 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

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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Sample Cross Reference 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH15	S	10-01-18 11:30	6 In	601307-001
PH15A	S	10-01-18 11:40	1.5 ft	601307-002
PH16	S	10-01-18 11:50	6 In	601307-003
PH16A	S	10-01-18 11:55	1.5 ft	601307-004
PH17	S	10-01-18 12:10	6 In	601307-005
PH17A	S	10-01-18 12:15	1.5 ft	601307-006
PH18	S	10-01-18 12:25	6 In	601307-007
PH18A	S	10-01-18 12:30	1.5 ft	601307-008
PH19	S	10-01-18 13:00	6 In	601307-009
PH19A	S	10-01-18 13:05	1.5 ft	601307-010
PH20	S	10-01-18 13:15	6 In	601307-011
PH20A	S	10-01-18 13:20	1.5 ft	601307-012
PH21	S	10-01-18 14:10	6 In	601307-013
PH21A	S	10-01-18 14:15	2 ft	601307-014
PH22	S	10-01-18 14:30	6 In	601307-015
PH22A	S	10-01-18 14:40	4 ft	601307-016
PH23	S	10-01-18 15:00	6 In	601307-017
PH23A	S	10-01-18 15:05	1.5 ft	601307-018
PH24	S	10-01-18 15:20	6 In	601307-019
PH24A	S	10-01-18 15:25	1.5 ft	601307-020
PH25	S	10-01-18 15:50	6 In	601307-021
PH25A	S	10-01-18 15:55	1.5 ft	601307-022



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU-19

Project ID:
Work Order Number(s): 601307

Report Date: 10-OCT-18
Date Received: 10/04/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3065636 Inorganic Anions by EPA 300
Nitrate as N RPD was outside laboratory control limits.
Samples in the analytical batch are: 601307-010, -011

Nitrate as N Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.

Samples in the analytical batch are: 601307-010, -011

Lab Sample ID 601307-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 601307-010, -011.

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

Batch: LBA-3065899 BTEX by EPA 8021B

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

Batch: LBA-3065910 BTEX by EPA 8021B

Lab Sample ID 601307-021 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 601307-021, -022.

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

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



Certificate of Analysis Summary 601307

LT Environmental, Inc., Arvada, CO

Project Name: JRU-19



Project Id:

Contact: Adrian Baker

Project Location: Cralsbad,NM

Date Received in Lab: Thu Oct-04-18 09:39 am

Report Date: 10-OCT-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	601307-001	601307-002	601307-003	601307-004	601307-005	601307-006
	Field Id:	PH15	PH15A	PH16	PH16A	PH17	PH17A
	Depth:	6- In	1.5- ft	6- In	1.5- ft	6- In	1.5- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Oct-01-18 11:30	Oct-01-18 11:40	Oct-01-18 11:50	Oct-01-18 11:55	Oct-01-18 12:10	Oct-01-18 12:15
BTEX by EPA 8021B	Extracted:	Oct-09-18 17:00	Oct-09-18 17:00	Oct-09-18 17:00	Oct-09-18 17:00	Oct-09-18 17:00	Oct-09-18 17:00
	Analyzed:	Oct-09-18 20:57	Oct-09-18 21:24	Oct-09-18 21:44	Oct-09-18 22:04	Oct-09-18 22:24	Oct-09-18 22:44
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Benzene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201
Toluene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201
Ethylbenzene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201
m,p-Xylenes		<0.00404 0.00404	<0.00401 0.00401	<0.00399 0.00399	<0.00398 0.00398	<0.00403 0.00403	<0.00402 0.00402
o-Xylene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201
Total Xylenes		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201
Total BTEX		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201
Inorganic Anions by EPA 300	Extracted:	Oct-05-18 11:30	Oct-05-18 11:30	Oct-05-18 11:30	Oct-05-18 11:30	Oct-05-18 11:30	Oct-05-18 11:30
	Analyzed:	Oct-05-18 12:30	Oct-05-18 14:29	Oct-05-18 13:50	Oct-05-18 14:35	Oct-05-18 14:41	Oct-05-18 14:46
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Chloride		193 4.96	214 5.05	10.0 4.98	38.4 4.97	<4.96 4.96	<4.97 4.97
TPH by SW8015 Mod	Extracted:	Oct-06-18 08:00	Oct-06-18 08:00	Oct-06-18 08:00	Oct-06-18 08:00	Oct-06-18 08:00	Oct-06-18 08:00
	Analyzed:	Oct-06-18 20:17	Oct-06-18 21:12	Oct-06-18 21:31	Oct-06-18 21:49	Oct-06-18 22:07	Oct-06-18 22:26
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0	<15.0 15.0

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 601307

LT Environmental, Inc., Arvada, CO

Project Name: JRU-19



Project Id:

Contact: Adrian Baker

Project Location: Cralsbad,NM

Date Received in Lab: Thu Oct-04-18 09:39 am

Report Date: 10-OCT-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	601307-007	601307-008	601307-009	601307-010	601307-011	601307-012
	Field Id:	PH18	PH18A	PH19	PH19A	PH20	PH20A
	Depth:	6- In	1.5- ft	6- In	1.5- ft	6- In	1.5- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Oct-01-18 12:25	Oct-01-18 12:30	Oct-01-18 13:00	Oct-01-18 13:05	Oct-01-18 13:15	Oct-01-18 13:20
BTEX by EPA 8021B	Extracted:	Oct-09-18 17:00	Oct-09-18 17:00	Oct-09-18 17:00	Oct-09-18 17:00	Oct-09-18 17:00	Oct-09-18 17:00
	Analyzed:	Oct-09-18 23:04	Oct-09-18 23:25	Oct-09-18 23:45	Oct-10-18 00:15	Oct-10-18 01:14	Oct-10-18 01:34
	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	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201
m,p-Xylenes		<0.00400 0.00400	<0.00402 0.00402	<0.00401 0.00401	<0.00398 0.00398	<0.00397 0.00397	<0.00402 0.00402
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201
Inorganic Anions by EPA 300	Extracted:	Oct-05-18 11:30	Oct-05-18 11:30	Oct-05-18 11:30	Oct-05-18 13:00	Oct-05-18 13:00	Oct-05-18 16:00
	Analyzed:	Oct-05-18 14:52	Oct-05-18 14:58	Oct-05-18 15:03	Oct-05-18 15:37	Oct-05-18 16:57	Oct-05-18 18:45
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		99.4 4.95	106 4.97	103 5.03	<4.96 4.96	697 5.00	188 5.01
TPH by SW8015 Mod	Extracted:	Oct-06-18 08:00	Oct-06-18 08:00	Oct-06-18 08:00	Oct-06-18 08:00	Oct-06-18 08:00	Oct-06-18 08:00
	Analyzed:	Oct-06-18 22:45	Oct-06-18 23:03	Oct-06-18 23:22	Oct-06-18 23:40	Oct-07-18 00:35	Oct-07-18 00:54
	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	<14.9 14.9	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	114 15.0	44.8 15.0	31.8 14.9	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	35.6 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	150 15.0	44.8 15.0	31.8 14.9	<15.0 15.0

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 601307

LT Environmental, Inc., Arvada, CO

Project Name: JRU-19



Project Id:

Contact: Adrian Baker

Project Location: Cralsbad,NM

Date Received in Lab: Thu Oct-04-18 09:39 am

Report Date: 10-OCT-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	601307-013	601307-014	601307-015	601307-016	601307-017	601307-018
	Field Id:	PH21	PH21A	PH22	PH22A	PH23	PH23A
	Depth:	6- In	2- ft	6- In	4- ft	6- In	1.5- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Oct-01-18 14:10	Oct-01-18 14:15	Oct-01-18 14:30	Oct-01-18 14:40	Oct-01-18 15:00	Oct-01-18 15:05
BTEX by EPA 8021B	Extracted:	Oct-09-18 17:00	Oct-09-18 17:00	Oct-09-18 17:00	Oct-09-18 17:00	Oct-09-18 17:00	Oct-09-18 17:00
	Analyzed:	Oct-10-18 01:54	Oct-10-18 02:15	Oct-10-18 02:35	Oct-10-18 02:55	Oct-10-18 03:15	Oct-10-18 03:36
	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	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00202 0.00202	0.00274 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202	0.00253 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201
m,p-Xylenes		<0.00399 0.00399	<0.00403 0.00403	0.0110 0.00401	<0.00398 0.00398	<0.00397 0.00397	<0.00402 0.00402
o-Xylene		<0.00200 0.00200	<0.00202 0.00202	0.0139 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201
Total Xylenes		<0.00200 0.00200	<0.00202 0.00202	0.0249 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201
Total BTEX		<0.00200 0.00200	<0.00202 0.00202	0.0302 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201
Inorganic Anions by EPA 300	Extracted:	Oct-05-18 16:00	Oct-05-18 16:00	Oct-05-18 16:00	Oct-05-18 16:00	Oct-05-18 16:00	Oct-05-18 16:00
	Analyzed:	Oct-05-18 19:02	Oct-05-18 19:08	Oct-05-18 19:13	Oct-05-18 19:19	Oct-05-18 19:36	Oct-05-18 19:42
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5280 49.6	321 4.98	7810 49.5	14000 99.0	<5.04 5.04	<4.98 4.98
TPH by SW8015 Mod	Extracted:	Oct-06-18 08:00	Oct-06-18 08:00	Oct-06-18 08:00	Oct-06-18 08:00	Oct-06-18 08:00	Oct-06-18 08:00
	Analyzed:	Oct-07-18 01:12	Oct-07-18 01:31	Oct-07-18 01:50	Oct-07-18 02:08	Oct-07-18 02:27	Oct-07-18 02:46
	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	31.5 15.0	28.8 14.9	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		1960 15.0	<15.0 15.0	1460 15.0	998 14.9	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		53.3 15.0	<15.0 15.0	44.8 15.0	44.1 14.9	<15.0 15.0	<15.0 15.0
Total TPH		2010 15.0	<15.0 15.0	1540 15.0	1070 14.9	<15.0 15.0	<15.0 15.0

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 601307

LT Environmental, Inc., Arvada, CO

Project Name: JRU-19



Project Id:

Contact: Adrian Baker

Project Location: Cralsbad,NM

Date Received in Lab: Thu Oct-04-18 09:39 am

Report Date: 10-OCT-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	601307-019	601307-020	601307-021	601307-022		
	<i>Field Id:</i>	PH24	PH24A	PH25	PH25A		
	<i>Depth:</i>	6- In	1.5- ft	6- In	1.5- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Oct-01-18 15:20	Oct-01-18 15:25	Oct-01-18 15:50	Oct-01-18 15:55		
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-09-18 17:00	Oct-09-18 17:00	Oct-09-18 15:45	Oct-09-18 15:45		
	<i>Analyzed:</i>	Oct-10-18 03:57	Oct-10-18 04:17	Oct-09-18 21:08	Oct-10-18 03:10		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
m,p-Xylenes		<0.00399 0.00399	<0.00400 0.00400	<0.00399 0.00399	<0.00401 0.00401		
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Inorganic Anions by EPA 300	<i>Extracted:</i>	Oct-05-18 16:00	Oct-05-18 16:00	Oct-05-18 16:00	Oct-05-18 16:00		
	<i>Analyzed:</i>	Oct-05-18 19:47	Oct-05-18 19:53	Oct-05-18 19:59	Oct-05-18 20:04		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		<4.96 4.96	<4.99 4.99	1020 4.99	33.9 4.96		
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-06-18 08:00	Oct-06-18 08:00	Oct-05-18 17:00	Oct-05-18 17:00		
	<i>Analyzed:</i>	Oct-07-18 03:04	Oct-07-18 03:23	Oct-06-18 14:08	Oct-06-18 14:26		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	23.7 15.0	<15.0 15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total TPH		<15.0 15.0	<15.0 15.0	23.7 15.0	<15.0 15.0		

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Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH15**
Lab Sample Id: 601307-001

Matrix: Soil
Date Collected: 10.01.18 11.30

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065631

Date Prep: 10.05.18 11.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	193	4.96	mg/kg	10.05.18 12.30		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.06.18 20.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.06.18 20.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.06.18 20.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.06.18 20.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	94	%	70-135	10.06.18 20.17		
o-Terphenyl	84-15-1	100	%	70-135	10.06.18 20.17		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH15**
Lab Sample Id: 601307-001

Matrix: Soil
Date Collected: 10.01.18 11.30

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065899

Date Prep: 10.09.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.09.18 20.57	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.09.18 20.57	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.09.18 20.57	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	10.09.18 20.57	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.09.18 20.57	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.09.18 20.57	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.09.18 20.57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	87	%	70-130	10.09.18 20.57		
1,4-Difluorobenzene	540-36-3	100	%	70-130	10.09.18 20.57		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH15A**
Lab Sample Id: 601307-002

Matrix: Soil
Date Collected: 10.01.18 11.40

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065631

Date Prep: 10.05.18 11.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	214	5.05	mg/kg	10.05.18 14.29		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.06.18 21.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.06.18 21.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.06.18 21.12	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.06.18 21.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	10.06.18 21.12	
o-Terphenyl	84-15-1	87	%	70-135	10.06.18 21.12	



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH15A**
Lab Sample Id: 601307-002

Matrix: Soil
Date Collected: 10.01.18 11.40

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065899

Date Prep: 10.09.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.09.18 21.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.09.18 21.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.09.18 21.24	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.09.18 21.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.09.18 21.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.09.18 21.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.09.18 21.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	10.09.18 21.24		
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.09.18 21.24		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH16**
Lab Sample Id: 601307-003

Matrix: Soil
Date Collected: 10.01.18 11.50

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065631

Date Prep: 10.05.18 11.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.0	4.98	mg/kg	10.05.18 13.50		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.06.18 21.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	10.06.18 21.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.06.18 21.31	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	10.06.18 21.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	10.06.18 21.31	
o-Terphenyl	84-15-1	92	%	70-135	10.06.18 21.31	



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH16**
Lab Sample Id: 601307-003

Matrix: Soil
Date Collected: 10.01.18 11.50

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065899

Date Prep: 10.09.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.09.18 21.44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.09.18 21.44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.09.18 21.44	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.09.18 21.44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.09.18 21.44	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.09.18 21.44	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.09.18 21.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	10.09.18 21.44		
4-Bromofluorobenzene	460-00-4	93	%	70-130	10.09.18 21.44		



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LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH16A**
Lab Sample Id: 601307-004

Matrix: Soil
Date Collected: 10.01.18 11.55

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065631

Date Prep: 10.05.18 11.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	38.4	4.97	mg/kg	10.05.18 14.35		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.06.18 21.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	10.06.18 21.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.06.18 21.49	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	10.06.18 21.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.06.18 21.49	
o-Terphenyl	84-15-1	92	%	70-135	10.06.18 21.49	



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LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH16A**
Lab Sample Id: 601307-004

Matrix: Soil
Date Collected: 10.01.18 11.55

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065899

Date Prep: 10.09.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.09.18 22.04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.09.18 22.04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.09.18 22.04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.09.18 22.04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.09.18 22.04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.09.18 22.04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.09.18 22.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.09.18 22.04		
4-Bromofluorobenzene	460-00-4	91	%	70-130	10.09.18 22.04		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH17**
Lab Sample Id: 601307-005

Matrix: Soil
Date Collected: 10.01.18 12.10

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065631

Date Prep: 10.05.18 11.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	10.05.18 14.41	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.06.18 22.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.06.18 22.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.06.18 22.07	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.06.18 22.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.06.18 22.07	
o-Terphenyl	84-15-1	97	%	70-135	10.06.18 22.07	



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LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH17**
Lab Sample Id: 601307-005

Matrix: Soil
Date Collected: 10.01.18 12.10

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065899

Date Prep: 10.09.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.09.18 22.24	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.09.18 22.24	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.09.18 22.24	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.09.18 22.24	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.09.18 22.24	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.09.18 22.24	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.09.18 22.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	10.09.18 22.24		
4-Bromofluorobenzene	460-00-4	94	%	70-130	10.09.18 22.24		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH17A**
Lab Sample Id: 601307-006

Matrix: Soil
Date Collected: 10.01.18 12.15

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065631

Date Prep: 10.05.18 11.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	10.05.18 14.46	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.06.18 22.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.06.18 22.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.06.18 22.26	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.06.18 22.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.06.18 22.26	
o-Terphenyl	84-15-1	97	%	70-135	10.06.18 22.26	



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH17A**
Lab Sample Id: 601307-006

Matrix: Soil
Date Collected: 10.01.18 12.15

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065899

Date Prep: 10.09.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.09.18 22.44	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.09.18 22.44	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.09.18 22.44	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.09.18 22.44	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.09.18 22.44	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.09.18 22.44	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.09.18 22.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	10.09.18 22.44		
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.09.18 22.44		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH18**
Lab Sample Id: 601307-007

Matrix: Soil
Date Collected: 10.01.18 12.25

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065631

Date Prep: 10.05.18 11.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	99.4	4.95	mg/kg	10.05.18 14.52		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.06.18 22.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.06.18 22.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.06.18 22.45	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.06.18 22.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.06.18 22.45	
o-Terphenyl	84-15-1	98	%	70-135	10.06.18 22.45	



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH18**
Lab Sample Id: 601307-007

Matrix: Soil
Date Collected: 10.01.18 12.25

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065899

Date Prep: 10.09.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.09.18 23.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.09.18 23.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.09.18 23.04	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	10.09.18 23.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.09.18 23.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.09.18 23.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.09.18 23.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.09.18 23.04		
4-Bromofluorobenzene	460-00-4	95	%	70-130	10.09.18 23.04		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH18A**
Lab Sample Id: 601307-008

Matrix: Soil
Date Collected: 10.01.18 12.30

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065631

Date Prep: 10.05.18 11.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	106	4.97	mg/kg	10.05.18 14.58		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.06.18 23.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.06.18 23.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.06.18 23.03	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.06.18 23.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.06.18 23.03	
o-Terphenyl	84-15-1	97	%	70-135	10.06.18 23.03	



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH18A**
Lab Sample Id: 601307-008

Matrix: Soil
Date Collected: 10.01.18 12.30

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065899

Date Prep: 10.09.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.09.18 23.25	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.09.18 23.25	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.09.18 23.25	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.09.18 23.25	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.09.18 23.25	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.09.18 23.25	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.09.18 23.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.09.18 23.25		
4-Bromofluorobenzene	460-00-4	96	%	70-130	10.09.18 23.25		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH19**
Lab Sample Id: 601307-009

Matrix: Soil
Date Collected: 10.01.18 13.00

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065631

Date Prep: 10.05.18 11.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	103	5.03	mg/kg	10.05.18 15.03		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.06.18 23.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	114	15.0	mg/kg	10.06.18 23.22		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	35.6	15.0	mg/kg	10.06.18 23.22		1
Total TPH	PHC635	150	15.0	mg/kg	10.06.18 23.22		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.06.18 23.22	
o-Terphenyl	84-15-1	94	%	70-135	10.06.18 23.22	



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH19**
Lab Sample Id: 601307-009

Matrix: Soil
Date Collected: 10.01.18 13.00

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065899

Date Prep: 10.09.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.09.18 23.45	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.09.18 23.45	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.09.18 23.45	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.09.18 23.45	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.09.18 23.45	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.09.18 23.45	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.09.18 23.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.09.18 23.45		
4-Bromofluorobenzene	460-00-4	96	%	70-130	10.09.18 23.45		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH19A**
Lab Sample Id: 601307-010

Matrix: Soil
Date Collected: 10.01.18 13.05

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065636

Date Prep: 10.05.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	10.05.18 15.37	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.06.18 23.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	44.8	15.0	mg/kg	10.06.18 23.40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.06.18 23.40	U	1
Total TPH	PHC635	44.8	15.0	mg/kg	10.06.18 23.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	10.06.18 23.40	
o-Terphenyl	84-15-1	89	%	70-135	10.06.18 23.40	



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH19A**
Lab Sample Id: 601307-010

Matrix: Soil
Date Collected: 10.01.18 13.05

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065899

Date Prep: 10.09.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.10.18 00.15	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.10.18 00.15	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.10.18 00.15	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.10.18 00.15	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.10.18 00.15	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.10.18 00.15	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.10.18 00.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	10.10.18 00.15		
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.10.18 00.15		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH20**
Lab Sample Id: 601307-011

Matrix: Soil
Date Collected: 10.01.18 13.15

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065636

Date Prep: 10.05.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	697	5.00	mg/kg	10.05.18 16.57		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.07.18 00.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	31.8	14.9	mg/kg	10.07.18 00.35		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.07.18 00.35	U	1
Total TPH	PHC635	31.8	14.9	mg/kg	10.07.18 00.35		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	93	%	70-135	10.07.18 00.35		
o-Terphenyl	84-15-1	97	%	70-135	10.07.18 00.35		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH20**
Lab Sample Id: 601307-011

Matrix: Soil
Date Collected: 10.01.18 13.15

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.09.18 17.00

Basis: Wet Weight

Seq Number: 3065899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.10.18 01.14	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.10.18 01.14	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.10.18 01.14	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.10.18 01.14	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.10.18 01.14	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.10.18 01.14	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.10.18 01.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	10.10.18 01.14		
4-Bromofluorobenzene	460-00-4	84	%	70-130	10.10.18 01.14		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH20A**
Lab Sample Id: 601307-012

Matrix: Soil
Date Collected: 10.01.18 13.20

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065645

Date Prep: 10.05.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	188	5.01	mg/kg	10.05.18 18.45		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.07.18 00.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.07.18 00.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.07.18 00.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.07.18 00.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.07.18 00.54	
o-Terphenyl	84-15-1	96	%	70-135	10.07.18 00.54	



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH20A**
Lab Sample Id: 601307-012

Matrix: Soil
Date Collected: 10.01.18 13.20

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.09.18 17.00

Basis: Wet Weight

Seq Number: 3065899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.10.18 01.34	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.10.18 01.34	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.10.18 01.34	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.10.18 01.34	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.10.18 01.34	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.10.18 01.34	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.10.18 01.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.10.18 01.34		
4-Bromofluorobenzene	460-00-4	89	%	70-130	10.10.18 01.34		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH21**
Lab Sample Id: 601307-013

Matrix: Soil
Date Collected: 10.01.18 14.10

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065645

Date Prep: 10.05.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5280	49.6	mg/kg	10.05.18 19.02		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.07.18 01.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	1960	15.0	mg/kg	10.07.18 01.12		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	53.3	15.0	mg/kg	10.07.18 01.12		1
Total TPH	PHC635	2010	15.0	mg/kg	10.07.18 01.12		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	95	%	70-135	10.07.18 01.12		
o-Terphenyl	84-15-1	129	%	70-135	10.07.18 01.12		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH21**
Lab Sample Id: 601307-013

Matrix: Soil
Date Collected: 10.01.18 14.10

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065899

Date Prep: 10.09.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.10.18 01.54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.10.18 01.54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.10.18 01.54	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.10.18 01.54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.10.18 01.54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.10.18 01.54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.10.18 01.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	10.10.18 01.54		
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.10.18 01.54		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH21A**
Lab Sample Id: 601307-014

Matrix: Soil
Date Collected: 10.01.18 14.15

Date Received: 10.04.18 09.39
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3065645

Date Prep: 10.05.18 16.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	321	4.98	mg/kg	10.05.18 19.08		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.07.18 01.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.07.18 01.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.07.18 01.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.07.18 01.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.07.18 01.31	
o-Terphenyl	84-15-1	97	%	70-135	10.07.18 01.31	



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH21A**
Lab Sample Id: 601307-014

Matrix: Soil
Date Collected: 10.01.18 14.15

Date Received: 10.04.18 09.39
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.09.18 17.00

Basis: Wet Weight

Seq Number: 3065899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.10.18 02.15	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.10.18 02.15	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.10.18 02.15	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.10.18 02.15	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.10.18 02.15	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.10.18 02.15	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.10.18 02.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	122	%	70-130	10.10.18 02.15		
4-Bromofluorobenzene	460-00-4	94	%	70-130	10.10.18 02.15		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH22**
Lab Sample Id: 601307-015

Matrix: Soil
Date Collected: 10.01.18 14.30

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065645

Date Prep: 10.05.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7810	49.5	mg/kg	10.05.18 19.13		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	31.5	15.0	mg/kg	10.07.18 01.50		1
Diesel Range Organics (DRO)	C10C28DRO	1460	15.0	mg/kg	10.07.18 01.50		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	44.8	15.0	mg/kg	10.07.18 01.50		1
Total TPH	PHC635	1540	15.0	mg/kg	10.07.18 01.50		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	10.07.18 01.50	
o-Terphenyl	84-15-1	119	%	70-135	10.07.18 01.50	



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH22**
Lab Sample Id: 601307-015

Matrix: Soil
Date Collected: 10.01.18 14.30

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065899

Date Prep: 10.09.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.10.18 02.35	U	1
Toluene	108-88-3	0.00274	0.00200	mg/kg	10.10.18 02.35		1
Ethylbenzene	100-41-4	0.00253	0.00200	mg/kg	10.10.18 02.35		1
m,p-Xylenes	179601-23-1	0.0110	0.00401	mg/kg	10.10.18 02.35		1
o-Xylene	95-47-6	0.0139	0.00200	mg/kg	10.10.18 02.35		1
Total Xylenes	1330-20-7	0.0249	0.00200	mg/kg	10.10.18 02.35		1
Total BTEX		0.0302	0.00200	mg/kg	10.10.18 02.35		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	90	%	70-130	10.10.18 02.35		
4-Bromofluorobenzene	460-00-4	101	%	70-130	10.10.18 02.35		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH22A**
Lab Sample Id: 601307-016

Matrix: Soil
Date Collected: 10.01.18 14.40

Date Received: 10.04.18 09.39
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3065645

Date Prep: 10.05.18 16.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14000	99.0	mg/kg	10.05.18 19.19		20

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	28.8	14.9	mg/kg	10.07.18 02.08		1
Diesel Range Organics (DRO)	C10C28DRO	998	14.9	mg/kg	10.07.18 02.08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	44.1	14.9	mg/kg	10.07.18 02.08		1
Total TPH	PHC635	1070	14.9	mg/kg	10.07.18 02.08		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	103	%	70-135	10.07.18 02.08		
o-Terphenyl	84-15-1	113	%	70-135	10.07.18 02.08		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH22A**
Lab Sample Id: 601307-016

Matrix: Soil
Date Collected: 10.01.18 14.40

Date Received: 10.04.18 09.39
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065899

Date Prep: 10.09.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.10.18 02.55	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.10.18 02.55	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.10.18 02.55	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.10.18 02.55	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.10.18 02.55	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.10.18 02.55	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.10.18 02.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	118	%	70-130	10.10.18 02.55		
4-Bromofluorobenzene	460-00-4	125	%	70-130	10.10.18 02.55		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH23**
Lab Sample Id: 601307-017

Matrix: Soil
Date Collected: 10.01.18 15.00

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3065645

Date Prep: 10.05.18 16.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.04	5.04	mg/kg	10.05.18 19.36	U	1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.07.18 02.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.07.18 02.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.07.18 02.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.07.18 02.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.07.18 02.27	
o-Terphenyl	84-15-1	99	%	70-135	10.07.18 02.27	



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH23**
Lab Sample Id: 601307-017

Matrix: Soil
Date Collected: 10.01.18 15.00

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065899

Date Prep: 10.09.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.10.18 03.15	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.10.18 03.15	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.10.18 03.15	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.10.18 03.15	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.10.18 03.15	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.10.18 03.15	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.10.18 03.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	84	%	70-130	10.10.18 03.15		
1,4-Difluorobenzene	540-36-3	100	%	70-130	10.10.18 03.15		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH23A**
Lab Sample Id: 601307-018

Matrix: Soil
Date Collected: 10.01.18 15.05

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065645

Date Prep: 10.05.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	10.05.18 19.42	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.07.18 02.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.07.18 02.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.07.18 02.46	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.07.18 02.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.07.18 02.46	
o-Terphenyl	84-15-1	95	%	70-135	10.07.18 02.46	



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH23A**
Lab Sample Id: 601307-018

Matrix: Soil
Date Collected: 10.01.18 15.05

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065899

Date Prep: 10.09.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.10.18 03.36	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.10.18 03.36	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.10.18 03.36	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.10.18 03.36	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.10.18 03.36	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.10.18 03.36	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.10.18 03.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.10.18 03.36		
4-Bromofluorobenzene	460-00-4	98	%	70-130	10.10.18 03.36		



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LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH24**
Lab Sample Id: 601307-019

Matrix: Soil
Date Collected: 10.01.18 15.20

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065645

Date Prep: 10.05.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	10.05.18 19.47	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.07.18 03.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.07.18 03.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.07.18 03.04	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.07.18 03.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	10.07.18 03.04	
o-Terphenyl	84-15-1	94	%	70-135	10.07.18 03.04	



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH24**
Lab Sample Id: 601307-019

Matrix: Soil
Date Collected: 10.01.18 15.20

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.09.18 17.00

Basis: Wet Weight

Seq Number: 3065899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.10.18 03.57	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.10.18 03.57	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.10.18 03.57	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.10.18 03.57	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.10.18 03.57	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.10.18 03.57	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.10.18 03.57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	10.10.18 03.57		
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.10.18 03.57		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH24A**
Lab Sample Id: 601307-020

Matrix: Soil
Date Collected: 10.01.18 15.25

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065645

Date Prep: 10.05.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	10.05.18 19.53	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065675

Date Prep: 10.06.18 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.07.18 03.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.07.18 03.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.07.18 03.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.07.18 03.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.07.18 03.23	
o-Terphenyl	84-15-1	95	%	70-135	10.07.18 03.23	



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH24A**
Lab Sample Id: 601307-020

Matrix: Soil
Date Collected: 10.01.18 15.25

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065899

Date Prep: 10.09.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.10.18 04.17	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.10.18 04.17	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.10.18 04.17	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	10.10.18 04.17	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.10.18 04.17	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.10.18 04.17	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.10.18 04.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	10.10.18 04.17		
1,4-Difluorobenzene	540-36-3	104	%	70-130	10.10.18 04.17		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH25**
Lab Sample Id: 601307-021

Matrix: Soil
Date Collected: 10.01.18 15.50

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065645

Date Prep: 10.05.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1020	4.99	mg/kg	10.05.18 19.59		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065672

Date Prep: 10.05.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.06.18 14.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	23.7	15.0	mg/kg	10.06.18 14.08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.06.18 14.08	U	1
Total TPH	PHC635	23.7	15.0	mg/kg	10.06.18 14.08		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.06.18 14.08	
o-Terphenyl	84-15-1	97	%	70-135	10.06.18 14.08	



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH25**
Lab Sample Id: 601307-021

Matrix: Soil
Date Collected: 10.01.18 15.50

Date Received: 10.04.18 09.39
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.09.18 15.45

Basis: Wet Weight

Seq Number: 3065910

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.09.18 21.08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.09.18 21.08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.09.18 21.08	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.09.18 21.08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.09.18 21.08	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.09.18 21.08	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.09.18 21.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	112	%	70-130	10.09.18 21.08		
4-Bromofluorobenzene	460-00-4	100	%	70-130	10.09.18 21.08		



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH25A**
Lab Sample Id: 601307-022

Matrix: Soil
Date Collected: 10.01.18 15.55

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3065645

Date Prep: 10.05.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	33.9	4.96	mg/kg	10.05.18 20.04		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3065672

Date Prep: 10.05.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.06.18 14.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.06.18 14.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.06.18 14.26	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.06.18 14.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.06.18 14.26	
o-Terphenyl	84-15-1	97	%	70-135	10.06.18 14.26	



Certificate of Analytical Results 601307



LT Environmental, Inc., Arvada, CO

JRU-19

Sample Id: **PH25A**
Lab Sample Id: 601307-022

Matrix: Soil
Date Collected: 10.01.18 15.55

Date Received: 10.04.18 09.39
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.09.18 15.45

Basis: Wet Weight

Seq Number: 3065910

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.10.18 03.10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.10.18 03.10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.10.18 03.10	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.10.18 03.10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.10.18 03.10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.10.18 03.10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.10.18 03.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	10.10.18 03.10		
1,4-Difluorobenzene	540-36-3	109	%	70-130	10.10.18 03.10		

- 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 601307

LT Environmental, Inc.

JRU-19

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065631

MB Sample Id: 7663626-1-BLK

Matrix: Solid

LCS Sample Id: 7663626-1-BKS

Prep Method: E300P

Date Prep: 10.05.18

LCSD Sample Id: 7663626-1-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	250	100	249	100	90-110	0	20	mg/kg	10.05.18 12:19	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065636

MB Sample Id: 7663676-1-BLK

Matrix: Solid

LCS Sample Id: 7663676-1-BKS

Prep Method: E300P

Date Prep: 10.05.18

LCSD Sample Id: 7663676-1-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	259	104	250	100	90-110	4	20	mg/kg	10.05.18 15:26	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065645

MB Sample Id: 7663645-1-BLK

Matrix: Solid

LCS Sample Id: 7663645-1-BKS

Prep Method: E300P

Date Prep: 10.05.18

LCSD Sample Id: 7663645-1-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	252	101	252	101	90-110	0	20	mg/kg	10.05.18 18:34	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065631

Parent Sample Id: 601307-001

Matrix: Soil

MS Sample Id: 601307-001 S

Prep Method: E300P

Date Prep: 10.05.18

MSD Sample Id: 601307-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	193	248	441	100	444	101	90-110	1	20	mg/kg	10.05.18 12:36	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065631

Parent Sample Id: 601307-003

Matrix: Soil

MS Sample Id: 601307-003 S

Prep Method: E300P

Date Prep: 10.05.18

MSD Sample Id: 601307-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10.0	249	267	103	274	106	90-110	3	20	mg/kg	10.05.18 13:55	

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

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

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 601307

LT Environmental, Inc.

JRU-19

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065636

Parent Sample Id: 601307-010

Matrix: Soil

MS Sample Id: 601307-010 S

Prep Method: E300P

Date Prep: 10.05.18

MSD Sample Id: 601307-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1.50	248	262	105	264	106	90-110	1	20	mg/kg	10.05.18 15:43	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065636

Parent Sample Id: 601307-011

Matrix: Soil

MS Sample Id: 601307-011 S

Prep Method: E300P

Date Prep: 10.05.18

MSD Sample Id: 601307-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	697	250	907	84	933	94	90-110	3	20	mg/kg	10.05.18 17:03	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065645

Parent Sample Id: 601307-012

Matrix: Soil

MS Sample Id: 601307-012 S

Prep Method: E300P

Date Prep: 10.05.18

MSD Sample Id: 601307-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	188	251	446	103	450	104	90-110	1	20	mg/kg	10.05.18 18:51	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3065645

Parent Sample Id: 601307-022

Matrix: Soil

MS Sample Id: 601307-022 S

Prep Method: E300P

Date Prep: 10.05.18

MSD Sample Id: 601307-022 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	33.9	248	303	109	303	109	90-110	0	20	mg/kg	10.05.18 20:10	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3065672

MB Sample Id: 7663668-1-BLK

Matrix: Solid

LCS Sample Id: 7663668-1-BKS

Prep Method: TX1005P

Date Prep: 10.05.18

LCSD Sample Id: 7663668-1-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	1020	102	952	95	70-135	7	20	mg/kg	10.06.18 11:02	
Diesel Range Organics (DRO)	<8.13	1000	1030	103	927	93	70-135	11	20	mg/kg	10.06.18 11:02	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		124		114		70-135	%	10.06.18 11:02
o-Terphenyl	99		112		104		70-135	%	10.06.18 11:02

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

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

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 601307

LT Environmental, Inc.

JRU-19

Analytical Method: TPH by SW8015 Mod

Seq Number: 3065675

MB Sample Id: 7663669-1-BLK

Matrix: Solid

LCS Sample Id: 7663669-1-BKS

Prep Method: TX1005P

Date Prep: 10.06.18

LCSD Sample Id: 7663669-1-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	966	97	1060	106	70-135	9	20	mg/kg	10.06.18 19:40	
Diesel Range Organics (DRO)	<8.13	1000	962	96	1070	107	70-135	11	20	mg/kg	10.06.18 19:40	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	93		125		124		70-135	%	10.06.18 19:40			
o-Terphenyl	98		104		118		70-135	%	10.06.18 19:40			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3065672

Parent Sample Id: 601306-007

Matrix: Soil

MS Sample Id: 601306-007 S

Prep Method: TX1005P

Date Prep: 10.05.18

MSD Sample Id: 601306-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	930	93	960	96	70-135	3	20	mg/kg	10.06.18 11:58	
Diesel Range Organics (DRO)	<8.12	999	932	93	973	97	70-135	4	20	mg/kg	10.06.18 11:58	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			128		119		70-135	%	10.06.18 11:58			
o-Terphenyl			102		110		70-135	%	10.06.18 11:58			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3065675

Parent Sample Id: 601307-001

Matrix: Soil

MS Sample Id: 601307-001 S

Prep Method: TX1005P

Date Prep: 10.06.18

MSD Sample Id: 601307-001 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)	8.81	998	935	93	964	96	70-135	3	20	mg/kg	10.06.18 20:35	
Diesel Range Organics (DRO)	<8.11	998	915	92	905	91	70-135	1	20	mg/kg	10.06.18 20:35	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			126		114		70-135	%	10.06.18 20:35			
o-Terphenyl			103		100		70-135	%	10.06.18 20:35			

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

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

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 601307

LT Environmental, Inc.

JRU-19

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065910

MB Sample Id: 7663826-1-BLK

Matrix: Solid

LCS Sample Id: 7663826-1-BKS

Prep Method: SW5030B

Date Prep: 10.09.18

LCSD Sample Id: 7663826-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.109	109	0.109	108	70-130	0	35	mg/kg	10.09.18 19:00	
Toluene	<0.00201	0.100	0.0997	100	0.0983	97	70-130	1	35	mg/kg	10.09.18 19:00	
Ethylbenzene	<0.00201	0.100	0.118	118	0.116	115	70-130	2	35	mg/kg	10.09.18 19:00	
m,p-Xylenes	<0.00402	0.201	0.235	117	0.233	115	70-130	1	35	mg/kg	10.09.18 19:00	
o-Xylene	<0.00201	0.100	0.119	119	0.117	116	70-130	2	35	mg/kg	10.09.18 19:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		103		106		70-130	%	10.09.18 19:00
4-Bromofluorobenzene	88		111		103		70-130	%	10.09.18 19:00

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065899

MB Sample Id: 7663828-1-BLK

Matrix: Solid

LCS Sample Id: 7663828-1-BKS

Prep Method: SW5030B

Date Prep: 10.09.18

LCSD Sample Id: 7663828-1-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	0.0925	93	0.101	100	70-130	9	35	mg/kg	10.09.18 18:57	
Toluene	<0.00200	0.100	0.0970	97	0.104	103	70-130	7	35	mg/kg	10.09.18 18:57	
Ethylbenzene	<0.00200	0.100	0.0983	98	0.103	102	70-130	5	35	mg/kg	10.09.18 18:57	
m,p-Xylenes	<0.00401	0.200	0.191	96	0.199	99	70-130	4	35	mg/kg	10.09.18 18:57	
o-Xylene	<0.00200	0.100	0.0924	92	0.0960	95	70-130	4	35	mg/kg	10.09.18 18:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		89		94		70-130	%	10.09.18 18:57
4-Bromofluorobenzene	86		87		85		70-130	%	10.09.18 18:57

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065910

Parent Sample Id: 601307-021

Matrix: Soil

MS Sample Id: 601307-021 S

Prep Method: SW5030B

Date Prep: 10.09.18

MSD Sample Id: 601307-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0681	67	0.0683	68	70-130	0	35	mg/kg	10.09.18 19:43	X
Toluene	<0.00202	0.101	0.0607	60	0.0632	63	70-130	4	35	mg/kg	10.09.18 19:43	X
Ethylbenzene	<0.00202	0.101	0.0624	62	0.0675	67	70-130	8	35	mg/kg	10.09.18 19:43	X
m,p-Xylenes	<0.00403	0.202	0.117	58	0.125	62	70-130	7	35	mg/kg	10.09.18 19:43	X
o-Xylene	<0.00202	0.101	0.0619	61	0.0662	66	70-130	7	35	mg/kg	10.09.18 19:43	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		108		70-130	%	10.09.18 19:43
4-Bromofluorobenzene	108		107		70-130	%	10.09.18 19:43

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

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

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 601307

LT Environmental, Inc.

JRU-19

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065899

Parent Sample Id: 601307-001

Matrix: Soil

MS Sample Id: 601307-001 S

Prep Method: SW5030B

Date Prep: 10.09.18

MSD Sample Id: 601307-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0830	82	0.0827	83	70-130	0	35	mg/kg	10.09.18 19:37	
Toluene	<0.00202	0.101	0.0848	84	0.0834	83	70-130	2	35	mg/kg	10.09.18 19:37	
Ethylbenzene	<0.00202	0.101	0.0833	82	0.0805	81	70-130	3	35	mg/kg	10.09.18 19:37	
m,p-Xylenes	<0.00403	0.202	0.159	79	0.153	76	70-130	4	35	mg/kg	10.09.18 19:37	
o-Xylene	<0.00202	0.101	0.0781	77	0.0761	76	70-130	3	35	mg/kg	10.09.18 19:37	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		90		70-130	%	10.09.18 19:37
4-Bromofluorobenzene	85		87		70-130	%	10.09.18 19:37

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

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

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

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



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

CHAIN OF CUSTODY

Page 1 of 3

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

Phoenix, Arizona (480-355-0900)

www.xenco.com

Xenco Quote #

Xenco Job #

601307

Client / Reporting Information

Company Name / Branch:

LT Environmental, Inc. - Permian Office

Company Address:

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

Email: Phone No:

Abaker@ltenv.com (432) 704-5178

Project Contact:

Adrian Baker

Samplers Name

Brenden

Project Information

Project Name/Number:

JRV-19

Project Location:

Carlsbad, NM

Invoice To:

XTO Energy - Kyle Little

PO Number:

28F-4980

Analytical Information

Matrix Codes

BTEX EPA 8020
TTH EPA 8015
Chloride 300.1

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	Sample Depth	Date	Time	Matrix	# of bottles	ICI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments
1	PH15	6"	10/1/18	1130	S	1									
2	PH15A	1.5'		1140											
3	PH16	6"		1150											
4	PH16A	1.5'		1155											
5	PH17	6"		1210											
6	PH17A	1.5'		1215											
7	PH18	6"		1225											
8	PH18A	1.5'		1230											
9	PH19	6"		1300											
10	PH19A	1.5'		1305											

Notes:

Data Deliverable Information

☐ Same Day TAT ☒ 5 Day TAT ☐ Level II Std QC ☐ Level IV (Full Data Pkg / raw data)

☐ Next Day EMERGENCY ☐ 7 Day TAT ☐ Level III Std QC+ Forms ☐ TRRP Level IV

☐ 2 Day EMERGENCY ☐ Contract TAT ☐ Level 3 (CLP Forms) ☐ UST / RG -411

☐ 3 Day EMERGENCY ☐ TRRP Checklist

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

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

Relinquished by Sampler:

Date Time:

Relinquished by:

Date Time:

Relinquished by:

Date Time:

Relinquished by:

Date Time:

Received By:

Date Time:

Received By:

Date Time:

Received By:

Date Time:

Received By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

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Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Received By:

Date Time:

Received By:

Date Time:

Received By:

Date Time:

Received By:

Date Time:

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

Client / Reporting Information			Project Information			Analytical Information			Matrix Codes		
Company Name / Branch: LT Environmental, Inc. - Permian Office			Project Name/Number: SRU-19								
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705			Project Location: Carlsbad, NM								
Email: ABaker@ltenv.com Project Contact: Adrian Baker			Phone No: (432) 704-5178			Invoice To: XTO Energy - Kyle Littlell					
Sample's Name Baker, Beth			PO Number: 288-4480								
No.			Field ID / Point of Collection			Collection			Number of preserved bottles		
			Sample Depth			Date			Time		
1			PH20			6"			10/1/18		
2			PH20A			1.5'			1315		
3			PH21			6"			1410		
4			PH21A			2'			1415		
5			PH22			6"			1430		
6			PH22B			4'			1445		
7			PH23			6"			1500		
8			PH23A-PH23B			1.5'			1505		
9			PH24			6"			1520		
10			PH24A			1.5'			1525		
Turnaround Time (Business days)			Data Deliverable Information			Notes:					
☐ Same Day TAT			☒ 5 Day TAT			☐ Level II Std QC			☐ Level IV (Full Data Pkg /raw data)		
☐ Next Day EMERGENCY			☐ 7 Day TAT			☐ Level III Std QC+ Forms			☐ TRRP Level IV		
☐ 2 Day EMERGENCY			☐ Contract TAT			☐ Level 3 (CLP Forms)			☐ UST / RG-411		
☐ 3 Day EMERGENCY						☐ TRRP Checklist					
TAT Starts Day received by Lab, if received by 5:00 pm											
Relinquished by Sampler:			Date Time:			Received By:			Date Time:		
1			10/2 17:25			1			10/2 17:25		
Relinquished by:			Date Time:			Received By:			Date Time:		
3			10/2 17:25			3			10/2 17:25		
Relinquished by:			Date Time:			Received By:			Date Time:		
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5			10/2 17:25			5			10/2 17:25		
Relinquished by:			Date Time:			Received By:			Date Time:		
3			10/2 17:25			3			10/2 17:25		
Relinquished by:			Date Time:			Received By:			Date Time:		
5			10/2 17:25			5			10/2 17:25		
Relinquished by:			Date Time:			Received By:			Date Time:		
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Relinquished by:			Date Time:			Received By:			Date Time:		
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Relinquished by:			Date Time:			Received By:			Date Time:		
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Relinquished by:			Date Time:			Received By:			Date Time:		
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3			10/2 17:25			3			10/2 17:25		
Relinquished by:			Date Time:			Received By:			Date Time:		
5			10/2 17:25			5			10/2 17:25		
Rel											



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

CHAIN OF CUSTODY

Page 3 of 3

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

Phoenix, Arizona (480-355-0900)

www.xenco.com

Xenco Quote #

Xenco Job #

601307

Client / Reporting Information

Project Information

Company Name / Branch:

LT Environmental, Inc. - Permian Office

Company Address:

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

Email: Phone No:

Abaker@lien.com (432) 704-5178

Project Contact:

Adrian Baker

Samplers Name

PERMIA

Project Name/Number:

TRU-10

Project Location:

Carlsbad, NM

Invoice To:

XTO Energy - Kyle Little

PO Number:

280-4480

Collection

Number of processed bottles

Matrix Codes

W = Water

S = Soil/Sed/Solid

GW = Ground Water

DW = Drinking Water

P = Product

SW = Surface water

SL = Sludge

OW = Ocean/Sea Water

WI = Wipe

O = Oil

WW = Waste Water

A = Air

Field Comments

Notes:

Turnaround Time (Business days)

Same Day TAT

Next Day EMERGENCY

2 Day EMERGENCY

3 Day EMERGENCY

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

Relinquished by Sampler

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

ORIGIN ID:CAOA (575) 887-6245
XENCO
PAC N MAIL
910 W PIERCE ST
CARLSBAD, NM 88220
UNITED STATES US

SHIP DATE: 03OCT18
ACTWGT: 42.00 LB
CAD: 101813708INET4040
DIMS: 26x14x14 IN
BILL RECIPIENT

TO HOLD FOR XENCO

FEDEX EXPRESS SHIP CENTER
FEDEX SHIP CENTER
3600 COUNTY RD 1276 S

MIDLAND TX 79711

(806) 794-1296

REF:

PO:

DEPT:

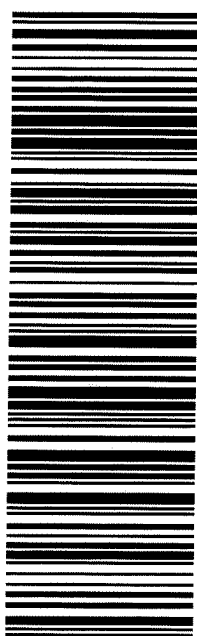


TRK# 7733 9179 0851
0201

THU - 04 OCT HOLD
STANDARD OVERNIGHT

41 MAFA

HLD
MAFA
TX-US LBB



After printing this label:

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

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 10/04/2018 09:39:00 AM

Work Order #: 601307

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 10/04/2018

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 10/04/2018

Analytical Report 625068

for
LT Environmental, Inc.

Project Manager: Ashley Ager

JRU 138 @ JRU 19

28-MAY-19

Collected By: Client



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

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



28-MAY-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **625068**

JRU 138 @ JRU 19

Project Address: Delaware Basin

Ashley Ager:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 625068. 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. 625068 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

Project Assistant

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



Sample Cross Reference 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW09	S	05-20-19 16:45	0 - 5.5 ft	625068-001
SW10	S	05-20-19 17:00	0 - 5.5 ft	625068-002
SW11	S	05-20-19 17:30	0 - 8 ft	625068-003
SW12	S	05-20-19 17:40	0 - 8 ft	625068-004
FS04	S	05-20-19 17:10	4.5 ft	625068-005
FS05	S	05-20-19 17:20	4.5 - 5.5 ft	625068-006
FS06	S	05-20-19 17:25	4.5 - 5.5 ft	625068-007
FS07	S	05-20-19 17:45	4.5 - 5.5 ft	625068-008
FS08	S	05-20-19 17:50	5.5 - 6.5 ft	625068-009
FS09	S	05-20-19 17:55	6.5 - 8 ft	625068-010
FS10	S	05-20-19 18:00	8 ft	625068-011
FS11	S	05-21-19 12:20	0 - 1.0 ft	625068-012



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *JRU 138 @ JRU 19*

Project ID:
Work Order Number(s): 625068

Report Date: 28-MAY-19
Date Received: 05/22/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3090048 BTEX by EPA 8021B

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

Lab Sample ID 625068-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). m,p-Xylenes recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 625068-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012.

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



Certificate of Analysis Summary 625068

LT Environmental, Inc., Arvada, CO

Project Name: JRU 138 @ JRU 19



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Wed May-22-19 10:45 am

Report Date: 28-MAY-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	625068-001	625068-002	625068-003	625068-004	625068-005	625068-006
	<i>Field Id:</i>	SW09	SW10	SW11	SW12	FS04	FS05
	<i>Depth:</i>	0-5.5 ft	0-5.5 ft	0-8 ft	0-8 ft	4.5- ft	4.5-5.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	May-20-19 16:45	May-20-19 17:00	May-20-19 17:30	May-20-19 17:40	May-20-19 17:10	May-20-19 17:20
BTEX by EPA 8021B	<i>Extracted:</i>	May-23-19 12:00	May-23-19 12:00	May-23-19 12:00	May-23-19 12:00	May-23-19 12:00	May-23-19 12:00
	<i>Analyzed:</i>	May-23-19 17:33	May-23-19 17:52	May-23-19 18:13	May-23-19 18:33	May-23-19 18:52	May-23-19 19:12
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201
m,p-Xylenes		0.00490 0.00399	<0.00398 0.00398	<0.00399 0.00399	<0.00402 0.00402	<0.00397 0.00397	<0.00402 0.00402
o-Xylene		0.00439 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201
Total Xylenes		0.00929 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201
Total BTEX		0.00929 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201
Chloride by EPA 300	<i>Extracted:</i>	May-22-19 15:30	May-22-19 15:30	May-22-19 15:30	May-22-19 15:30	May-22-19 15:30	May-22-19 15:30
	<i>Analyzed:</i>	May-22-19 16:07	May-22-19 16:22	May-22-19 16:28	May-22-19 16:33	May-22-19 16:38	May-22-19 16:53
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		217 4.97	10.6 5.04	16.2 4.98	16.3 5.01	7.25 4.95	752 4.99
TPH by SW8015 Mod	<i>Extracted:</i>	May-25-19 09:00	May-25-19 09:00	May-25-19 09:00	May-25-19 09:00	May-25-19 09:00	May-25-19 09:00
	<i>Analyzed:</i>	May-25-19 15:28	May-25-19 18:10	May-25-19 18:29	May-25-19 18:49	May-25-19 19:09	May-25-19 19:29
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		18.1 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		515 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		67.2 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		600 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total GRO-DRO		533 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 625068

LT Environmental, Inc., Arvada, CO

Project Name: JRU 138 @ JRU 19



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Wed May-22-19 10:45 am

Report Date: 28-MAY-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	625068-007	625068-008	625068-009	625068-010	625068-011	625068-012
	<i>Field Id:</i>	FS06	FS07	FS08	FS09	FS10	FS11
	<i>Depth:</i>	4.5-5.5 ft	4.5-5.5 ft	5.5-6.5 ft	6.5-8 ft	8- ft	0-1.0 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	May-20-19 17:25	May-20-19 17:45	May-20-19 17:50	May-20-19 17:55	May-20-19 18:00	May-21-19 12:20
BTEX by EPA 8021B	<i>Extracted:</i>	May-23-19 12:00	May-23-19 12:00	May-23-19 12:00	May-23-19 12:00	May-23-19 12:00	May-23-19 12:00
	<i>Analyzed:</i>	May-23-19 19:32	May-23-19 19:51	May-23-19 20:11	May-23-19 20:30	May-23-19 21:46	May-23-19 22:05
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
m,p-Xylenes		<0.00398 0.00398	<0.00400 0.00400	<0.00398 0.00398	<0.00402 0.00402	<0.00399 0.00399	<0.00403 0.00403
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	May-22-19 15:30	May-22-19 15:30	May-22-19 15:30	May-22-19 15:30	May-22-19 15:30	May-22-19 15:30
	<i>Analyzed:</i>	May-22-19 16:58	May-22-19 17:04	May-22-19 17:09	May-22-19 17:14	May-22-19 17:35	May-22-19 17:40
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		502 4.99	327 4.99	3100 25.0	3110 25.1	3250 24.9	1320 5.03
TPH by SW8015 Mod	<i>Extracted:</i>	May-25-19 09:00	May-25-19 09:00	May-25-19 09:00	May-25-19 09:00	May-25-19 09:00	May-25-19 09:00
	<i>Analyzed:</i>	May-25-19 19:49	May-25-19 20:09	May-25-19 20:29	May-25-19 20:48	May-25-19 21:28	May-25-19 21:47
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	21.4 15.0	141 15.0	15.6 14.9	16.2 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	18.1 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	21.4 15.0	159 15.0	15.6 14.9	16.2 15.0	<15.0 15.0
Total GRO-DRO		<15.0 15.0	21.4 15.0	141 15.0	15.6 14.9	16.2 15.0	<15.0 15.0

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW09**
Lab Sample Id: 625068-001

Matrix: Soil
Date Collected: 05.20.19 16.45

Date Received: 05.22.19 10.45
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3089928

Date Prep: 05.22.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	217	4.97	mg/kg	05.22.19 16.07		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090327

Date Prep: 05.25.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	18.1	15.0	mg/kg	05.25.19 15.28		1
Diesel Range Organics (DRO)	C10C28DRO	515	15.0	mg/kg	05.25.19 15.28		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	67.2	15.0	mg/kg	05.25.19 15.28		1
Total TPH	PHC635	600	15.0	mg/kg	05.25.19 15.28		1
Total GRO-DRO	PHC628	533	15.0	mg/kg	05.25.19 15.28		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	05.25.19 15.28	
o-Terphenyl	84-15-1	115	%	70-135	05.25.19 15.28	



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW09**
Lab Sample Id: 625068-001

Matrix: Soil
Date Collected: 05.20.19 16.45

Date Received: 05.22.19 10.45
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090048

Date Prep: 05.23.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.23.19 17.33	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.23.19 17.33	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.23.19 17.33	U	1
m,p-Xylenes	179601-23-1	0.00490	0.00399	mg/kg	05.23.19 17.33		1
o-Xylene	95-47-6	0.00439	0.00200	mg/kg	05.23.19 17.33		1
Total Xylenes	1330-20-7	0.00929	0.00200	mg/kg	05.23.19 17.33		1
Total BTEX		0.00929	0.00200	mg/kg	05.23.19 17.33		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	05.23.19 17.33		
4-Bromofluorobenzene	460-00-4	107	%	70-130	05.23.19 17.33		



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW10**
Lab Sample Id: 625068-002

Matrix: Soil
Date Collected: 05.20.19 17.00

Date Received: 05.22.19 10.45
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3089928

Date Prep: 05.22.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.6	5.04	mg/kg	05.22.19 16.22		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090327

Date Prep: 05.25.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	05.25.19 18.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	05.25.19 18.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	05.25.19 18.10	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	05.25.19 18.10	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	05.25.19 18.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	05.25.19 18.10	
o-Terphenyl	84-15-1	93	%	70-135	05.25.19 18.10	



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW10**
Lab Sample Id: 625068-002

Matrix: Soil
Date Collected: 05.20.19 17.00

Date Received: 05.22.19 10.45
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090048

Date Prep: 05.23.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.23.19 17.52	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.23.19 17.52	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.23.19 17.52	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.23.19 17.52	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.23.19 17.52	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.23.19 17.52	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.23.19 17.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	05.23.19 17.52		
4-Bromofluorobenzene	460-00-4	101	%	70-130	05.23.19 17.52		



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW11**
Lab Sample Id: 625068-003

Matrix: Soil
Date Collected: 05.20.19 17.30

Date Received: 05.22.19 10.45
Sample Depth: 0 - 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3089928

Date Prep: 05.22.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.2	4.98	mg/kg	05.22.19 16.28		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090327

Date Prep: 05.25.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.25.19 18.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.25.19 18.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.25.19 18.29	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.25.19 18.29	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.25.19 18.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.25.19 18.29	
o-Terphenyl	84-15-1	88	%	70-135	05.25.19 18.29	



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW11**
Lab Sample Id: 625068-003

Matrix: Soil
Date Collected: 05.20.19 17.30

Date Received: 05.22.19 10.45
Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090048

Date Prep: 05.23.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.23.19 18.13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.23.19 18.13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.23.19 18.13	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.23.19 18.13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.23.19 18.13	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.23.19 18.13	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.23.19 18.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	05.23.19 18.13		
1,4-Difluorobenzene	540-36-3	101	%	70-130	05.23.19 18.13		



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW12**
Lab Sample Id: 625068-004

Matrix: Soil
Date Collected: 05.20.19 17.40

Date Received: 05.22.19 10.45
Sample Depth: 0 - 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3089928

Date Prep: 05.22.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.3	5.01	mg/kg	05.22.19 16.33		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090327

Date Prep: 05.25.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.25.19 18.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.25.19 18.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.25.19 18.49	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.25.19 18.49	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.25.19 18.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.25.19 18.49	
o-Terphenyl	84-15-1	88	%	70-135	05.25.19 18.49	



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW12**
Lab Sample Id: 625068-004

Matrix: Soil
Date Collected: 05.20.19 17.40

Date Received: 05.22.19 10.45
Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.23.19 12.00

Basis: Wet Weight

Seq Number: 3090048

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.23.19 18.33	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.23.19 18.33	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.23.19 18.33	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.23.19 18.33	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.23.19 18.33	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.23.19 18.33	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.23.19 18.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	05.23.19 18.33		
4-Bromofluorobenzene	460-00-4	103	%	70-130	05.23.19 18.33		



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS04**
Lab Sample Id: 625068-005

Matrix: Soil
Date Collected: 05.20.19 17.10

Date Received: 05.22.19 10.45
Sample Depth: 4.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3089928

Date Prep: 05.22.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.25	4.95	mg/kg	05.22.19 16.38		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090327

Date Prep: 05.25.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.25.19 19.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.25.19 19.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.25.19 19.09	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.25.19 19.09	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.25.19 19.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.25.19 19.09	
o-Terphenyl	84-15-1	91	%	70-135	05.25.19 19.09	



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS04**
Lab Sample Id: 625068-005

Matrix: Soil
Date Collected: 05.20.19 17.10

Date Received: 05.22.19 10.45
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090048

Date Prep: 05.23.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.23.19 18.52	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.23.19 18.52	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	05.23.19 18.52	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	05.23.19 18.52	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	05.23.19 18.52	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	05.23.19 18.52	U	1
Total BTEX		<0.00198	0.00198	mg/kg	05.23.19 18.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	05.23.19 18.52		
1,4-Difluorobenzene	540-36-3	101	%	70-130	05.23.19 18.52		



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS05**
Lab Sample Id: 625068-006

Matrix: Soil
Date Collected: 05.20.19 17.20

Date Received: 05.22.19 10.45
Sample Depth: 4.5 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3089928

Date Prep: 05.22.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	752	4.99	mg/kg	05.22.19 16.53		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090327

Date Prep: 05.25.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.25.19 19.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.25.19 19.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.25.19 19.29	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.25.19 19.29	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.25.19 19.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	05.25.19 19.29	
o-Terphenyl	84-15-1	83	%	70-135	05.25.19 19.29	



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS05**
Lab Sample Id: 625068-006

Matrix: Soil
Date Collected: 05.20.19 17.20

Date Received: 05.22.19 10.45
Sample Depth: 4.5 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090048

Date Prep: 05.23.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.23.19 19.12	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.23.19 19.12	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.23.19 19.12	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.23.19 19.12	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.23.19 19.12	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.23.19 19.12	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.23.19 19.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	05.23.19 19.12		
1,4-Difluorobenzene	540-36-3	102	%	70-130	05.23.19 19.12		



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS06**
Lab Sample Id: 625068-007

Matrix: Soil
Date Collected: 05.20.19 17.25

Date Received: 05.22.19 10.45
Sample Depth: 4.5 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3089928

Date Prep: 05.22.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	502	4.99	mg/kg	05.22.19 16.58		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090327

Date Prep: 05.25.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.25.19 19.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.25.19 19.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.25.19 19.49	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.25.19 19.49	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.25.19 19.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.25.19 19.49	
o-Terphenyl	84-15-1	91	%	70-135	05.25.19 19.49	



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS06**
Lab Sample Id: 625068-007

Matrix: Soil
Date Collected: 05.20.19 17.25

Date Received: 05.22.19 10.45
Sample Depth: 4.5 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090048

Date Prep: 05.23.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.23.19 19.32	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.23.19 19.32	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.23.19 19.32	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.23.19 19.32	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.23.19 19.32	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.23.19 19.32	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.23.19 19.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	05.23.19 19.32		
1,4-Difluorobenzene	540-36-3	103	%	70-130	05.23.19 19.32		



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS07**
Lab Sample Id: 625068-008

Matrix: Soil
Date Collected: 05.20.19 17.45

Date Received: 05.22.19 10.45
Sample Depth: 4.5 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3089928

Date Prep: 05.22.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	327	4.99	mg/kg	05.22.19 17.04		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090327

Date Prep: 05.25.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.25.19 20.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	21.4	15.0	mg/kg	05.25.19 20.09		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.25.19 20.09	U	1
Total TPH	PHC635	21.4	15.0	mg/kg	05.25.19 20.09		1
Total GRO-DRO	PHC628	21.4	15.0	mg/kg	05.25.19 20.09		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	05.25.19 20.09	
o-Terphenyl	84-15-1	93	%	70-135	05.25.19 20.09	



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS07**
Lab Sample Id: 625068-008

Matrix: Soil
Date Collected: 05.20.19 17.45

Date Received: 05.22.19 10.45
Sample Depth: 4.5 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090048

Date Prep: 05.23.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.23.19 19.51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.23.19 19.51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.23.19 19.51	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	05.23.19 19.51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.23.19 19.51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.23.19 19.51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.23.19 19.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	05.23.19 19.51		
1,4-Difluorobenzene	540-36-3	103	%	70-130	05.23.19 19.51		



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS08**
Lab Sample Id: 625068-009

Matrix: Soil
Date Collected: 05.20.19 17.50

Date Received: 05.22.19 10.45
Sample Depth: 5.5 - 6.5 ft

Analytical Method: Chloride by EPA 300
Tech: CHE
Analyst: CHE
Seq Number: 3089928

Date Prep: 05.22.19 15.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3100	25.0	mg/kg	05.22.19 17.09		5

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090327

Date Prep: 05.25.19 09.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.25.19 20.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	141	15.0	mg/kg	05.25.19 20.29		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	18.1	15.0	mg/kg	05.25.19 20.29		1
Total TPH	PHC635	159	15.0	mg/kg	05.25.19 20.29		1
Total GRO-DRO	PHC628	141	15.0	mg/kg	05.25.19 20.29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	05.25.19 20.29	
o-Terphenyl	84-15-1	96	%	70-135	05.25.19 20.29	



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS08**
Lab Sample Id: 625068-009

Matrix: Soil
Date Collected: 05.20.19 17.50

Date Received: 05.22.19 10.45
Sample Depth: 5.5 - 6.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.23.19 12.00

Basis: Wet Weight

Seq Number: 3090048

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.23.19 20.11	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.23.19 20.11	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.23.19 20.11	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.23.19 20.11	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.23.19 20.11	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.23.19 20.11	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.23.19 20.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	05.23.19 20.11		
4-Bromofluorobenzene	460-00-4	101	%	70-130	05.23.19 20.11		



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS09**
Lab Sample Id: 625068-010

Matrix: Soil
Date Collected: 05.20.19 17.55

Date Received: 05.22.19 10.45
Sample Depth: 6.5 - 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3089928

Date Prep: 05.22.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3110	25.1	mg/kg	05.22.19 17.14		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090327

Date Prep: 05.25.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	05.25.19 20.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	15.6	14.9	mg/kg	05.25.19 20.48		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	05.25.19 20.48	U	1
Total TPH	PHC635	15.6	14.9	mg/kg	05.25.19 20.48		1
Total GRO-DRO	PHC628	15.6	14.9	mg/kg	05.25.19 20.48		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.25.19 20.48	
o-Terphenyl	84-15-1	91	%	70-135	05.25.19 20.48	



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS09**
Lab Sample Id: 625068-010

Matrix: Soil
Date Collected: 05.20.19 17.55

Date Received: 05.22.19 10.45
Sample Depth: 6.5 - 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090048

Date Prep: 05.23.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.23.19 20.30	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.23.19 20.30	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.23.19 20.30	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.23.19 20.30	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.23.19 20.30	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.23.19 20.30	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.23.19 20.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	05.23.19 20.30		
1,4-Difluorobenzene	540-36-3	101	%	70-130	05.23.19 20.30		



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS10**
Lab Sample Id: 625068-011

Matrix: Soil
Date Collected: 05.20.19 18.00

Date Received: 05.22.19 10.45
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3089928

Date Prep: 05.22.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3250	24.9	mg/kg	05.22.19 17.35		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090327

Date Prep: 05.25.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.25.19 21.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	16.2	15.0	mg/kg	05.25.19 21.28		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.25.19 21.28	U	1
Total TPH	PHC635	16.2	15.0	mg/kg	05.25.19 21.28		1
Total GRO-DRO	PHC628	16.2	15.0	mg/kg	05.25.19 21.28		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.25.19 21.28	
o-Terphenyl	84-15-1	92	%	70-135	05.25.19 21.28	



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS10**
Lab Sample Id: 625068-011

Matrix: Soil
Date Collected: 05.20.19 18.00

Date Received: 05.22.19 10.45
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090048

Date Prep: 05.23.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.23.19 21.46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.23.19 21.46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.23.19 21.46	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.23.19 21.46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.23.19 21.46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.23.19 21.46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.23.19 21.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	05.23.19 21.46		
1,4-Difluorobenzene	540-36-3	100	%	70-130	05.23.19 21.46		



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS11**
Lab Sample Id: 625068-012

Matrix: Soil
Date Collected: 05.21.19 12.20

Date Received: 05.22.19 10.45
Sample Depth: 0 - 1.0 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3089928

Date Prep: 05.22.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1320	5.03	mg/kg	05.22.19 17.40		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090327

Date Prep: 05.25.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.25.19 21.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.25.19 21.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.25.19 21.47	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.25.19 21.47	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.25.19 21.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	05.25.19 21.47	
o-Terphenyl	84-15-1	89	%	70-135	05.25.19 21.47	



Certificate of Analytical Results 625068



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS11**
Lab Sample Id: 625068-012

Matrix: Soil
Date Collected: 05.21.19 12.20

Date Received: 05.22.19 10.45
Sample Depth: 0 - 1.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090048

Date Prep: 05.23.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.23.19 22.05	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.23.19 22.05	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.23.19 22.05	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	05.23.19 22.05	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.23.19 22.05	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.23.19 22.05	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.23.19 22.05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	05.23.19 22.05		
4-Bromofluorobenzene	460-00-4	102	%	70-130	05.23.19 22.05		

- 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 625068

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: Chloride by EPA 300

Seq Number: 3089928

MB Sample Id: 7678384-1-BLK

Matrix: Solid

LCS Sample Id: 7678384-1-BKS

Prep Method: E300P

Date Prep: 05.22.19

LCSD Sample Id: 7678384-1-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	257	103	255	102	90-110	1	20	mg/kg	05.22.19 15:56	

Analytical Method: Chloride by EPA 300

Seq Number: 3089928

Parent Sample Id: 625068-001

Matrix: Soil

MS Sample Id: 625068-001 S

Prep Method: E300P

Date Prep: 05.22.19

MSD Sample Id: 625068-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	217	249	444	91	444	91	90-110	0	20	mg/kg	05.22.19 16:12	

Analytical Method: Chloride by EPA 300

Seq Number: 3089928

Parent Sample Id: 625069-001

Matrix: Soil

MS Sample Id: 625069-001 S

Prep Method: E300P

Date Prep: 05.22.19

MSD Sample Id: 625069-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.65	250	245	97	245	97	90-110	0	20	mg/kg	05.22.19 17:24	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3090327

MB Sample Id: 7678656-1-BLK

Matrix: Solid

LCS Sample Id: 7678656-1-BKS

Prep Method: TX1005P

Date Prep: 05.25.19

LCSD Sample Id: 7678656-1-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	1130	113	1100	110	70-135	3	20	mg/kg	05.25.19 14:49	
Diesel Range Organics (DRO)	<8.13	1000	1060	106	1030	103	70-135	3	20	mg/kg	05.25.19 14:49	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		125		124		70-135	%	05.25.19 14:49
o-Terphenyl	92		106		101		70-135	%	05.25.19 14:49

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 625068

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: TPH by SW8015 Mod

Seq Number: 3090327

Parent Sample Id: 625068-001

Matrix: Soil

MS Sample Id: 625068-001 S

Prep Method: TX1005P

Date Prep: 05.25.19

MSD Sample Id: 625068-001 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)	18.1	998	1110	109	1120	110	70-135	1	20	mg/kg	05.25.19 15:48	
Diesel Range Organics (DRO)	515	998	1530	102	1550	104	70-135	1	20	mg/kg	05.25.19 15:48	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		123		70-135	%	05.25.19 15:48
o-Terphenyl	110		110		70-135	%	05.25.19 15:48

Analytical Method: BTEX by EPA 8021B

Seq Number: 3090048

MB Sample Id: 7678494-1-BLK

Matrix: Solid

LCS Sample Id: 7678494-1-BKS

Prep Method: SW5030B

Date Prep: 05.23.19

LCSD Sample Id: 7678494-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0996	0.109	109	0.102	102	70-130	7	35	mg/kg	05.23.19 15:33	
Toluene	<0.000454	0.0996	0.110	110	0.104	104	70-130	6	35	mg/kg	05.23.19 15:33	
Ethylbenzene	<0.000563	0.0996	0.115	115	0.108	108	70-130	6	35	mg/kg	05.23.19 15:33	
m,p-Xylenes	<0.00101	0.199	0.237	119	0.223	112	70-130	6	35	mg/kg	05.23.19 15:33	
o-Xylene	<0.000343	0.0996	0.115	115	0.109	109	70-130	5	35	mg/kg	05.23.19 15:33	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		107		107		70-130	%	05.23.19 15:33
4-Bromofluorobenzene	83		107		105		70-130	%	05.23.19 15:33

Analytical Method: BTEX by EPA 8021B

Seq Number: 3090048

Parent Sample Id: 625068-001

Matrix: Soil

MS Sample Id: 625068-001 S

Prep Method: SW5030B

Date Prep: 05.23.19

MSD Sample Id: 625068-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000386	0.100	0.0967	97	0.0837	84	70-130	14	35	mg/kg	05.23.19 16:13	
Toluene	<0.000457	0.100	0.0936	94	0.0786	79	70-130	17	35	mg/kg	05.23.19 16:13	
Ethylbenzene	0.000589	0.100	0.0862	86	0.0697	70	70-130	21	35	mg/kg	05.23.19 16:13	
m,p-Xylenes	0.00490	0.201	0.174	84	0.143	69	70-130	20	35	mg/kg	05.23.19 16:13	X
o-Xylene	0.00439	0.100	0.0946	90	0.0778	74	70-130	19	35	mg/kg	05.23.19 16:13	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		102		70-130	%	05.23.19 16:13
4-Bromofluorobenzene	110		103		70-130	%	05.23.19 16:13

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

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

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: 1050108

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

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Page 1 of 2

Project Manager:	Ashley Ayer	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	8104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad NM 88120
Phone:	432.704.5178	Email:	aaayer@ltenv.com & ayayse@ltenv.com

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

ANALYSIS REQUEST

Work Order Notes

Project Name:	JRU 138 @ JRU 19	Turn Around	☐
Project Number:	22P-4980	Rush:	3 day
P.O. Number:		Due Date:	5/24/19
Sampler's Name:	Anna Byers		

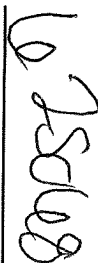
SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
Temperature (°C):	0/10.4	Thermometer ID		
Received Intact:	Yes ☒ No ☐	Correction Factor:		
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:		
Sample Custody Seals:	Yes ☒ No ☐ N/A			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM Texas 11 A' Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed	TCLP / SPLP 6010:	8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Anna Byers	2 [Signature]	5/24/19 @ 15:05	3 [Signature]	4 [Signature]	5/24/19
5			6		



Page 2 of 2

ANALYSIS REQUEST

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

Sample Comments

1631 / 245.1 / 7470 / 7471: Hc

Date/Time 23/11/2023 11:00

ORIGIN ID:CAOA (281) 240-4200
 SAMPLE CUSTODY
 XENCO LABORATORIES NM
 1089 N CANAL ST
 CARLSBAD, NM 88220
 UNITED STATES US

SHIP DATE: 21MAY'19
 ACTWGT: 38.00 LB
 CAD: 114486676/INET 4100
 DIMS: 13x9x9 IN
 BILL SENDER

TO **SAMPLE RECEIVING**

3600 S COUNTY ROAD 1276

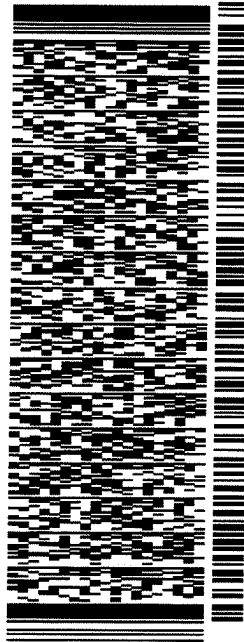
MIDLAND TX 79706

REF: (432) 704-5440

INV:

PO:

DEPT:



J191019010701uv

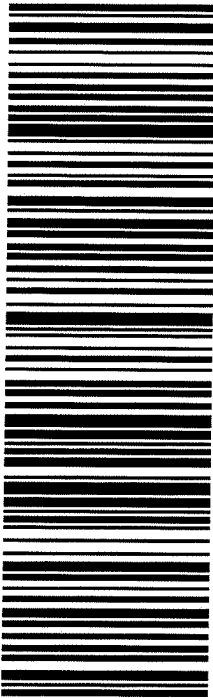
565J1/D66C/23AD

TRK# 7752 7739 1614
 0201

WED - 22 MAY HOLD
PRIORITY OVERNIGHT

41 MAFA

HLD 79706
 TX-US LBB



After printing this label:

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

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

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



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 05/22/2019 10:45:00 AM

Work Order #: 625068

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

Brianna Teel

Date: 05/22/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 05/22/2019

Analytical Report 625763

for
LT Environmental, Inc.

Project Manager: Ashley Ager

JRU L38 @ JRU 19

C1291814B

31-MAY-19

Collected By: Client



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

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



31-MAY-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **625763**

JRU L38 @ JRU 19

Project Address: Delaware Basin

Ashley Ager:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 625763. 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. 625763 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

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS12	S	05-23-19 08:20	1.5 ft	625763-001
FS13	S	05-23-19 08:25	1.5 ft	625763-002
FS14	S	05-23-19 14:35	8 ft	625763-003
FS15	S	05-24-19 10:00	4 ft	625763-004
FS16	S	05-24-19 10:02	4 ft	625763-005
FS17	S	05-24-19 11:35	4 - 9 ft	625763-006
FS18	S	05-24-19 11:40	4 - 9 ft	625763-007
SW13	S	05-23-19 15:35	0 - 8 ft	625763-008
SW14	S	05-23-19 15:45	0 - 8 ft	625763-009
SW15	S	05-24-19 09:50	0 - 4 ft	625763-010



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *JRU L38 @ JRU 19*

Project ID: C1291814B
Work Order Number(s): 625763

Report Date: 31-MAY-19
Date Received: 05/29/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3090542 Inorganic Anions by EPA 300

Lab Sample ID 625812-001 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: 625763-001, -002, -003, -004, -005, -006, -007, -008, -009, -010.

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

Batch: LBA-3090683 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 625763-001.

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



Certificate of Analysis Summary 625763

LT Environmental, Inc., Arvada, CO

Project Name: JRU L38 @ JRU 19



Project Id: C1291814B
Contact: Ashley Ager
Project Location: Delaware Basin

Date Received in Lab: Wed May-29-19 12:15 pm
Report Date: 31-MAY-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	625763-001	625763-002	625763-003	625763-004	625763-005	625763-006
	<i>Field Id:</i>	FS12	FS13	FS14	FS15	FS16	FS17
	<i>Depth:</i>	1.5- ft	1.5- ft	8- ft	4- ft	4- ft	4-9 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	May-23-19 08:20	May-23-19 08:25	May-23-19 14:35	May-24-19 10:00	May-24-19 10:02	May-24-19 11:35
BTEX by EPA 8021B	<i>Extracted:</i>	May-30-19 16:00	May-30-19 16:00	May-30-19 16:00	May-30-19 16:00	May-30-19 16:00	May-30-19 16:00
	<i>Analyzed:</i>	May-31-19 01:04	May-31-19 01:23	May-31-19 01:42	May-31-19 02:01	May-31-19 02:20	May-31-19 02:39
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00401 0.00401	<0.00397 0.00397	<0.00402 0.00402	<0.00398 0.00398	<0.00399 0.00399	<0.00401 0.00401
o-Xylene		<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	May-29-19 15:45	May-29-19 15:45	May-29-19 15:45	May-29-19 15:45	May-29-19 15:45	May-29-19 15:45
	<i>Analyzed:</i>	May-29-19 23:53	May-29-19 23:32	May-30-19 02:55	May-30-19 00:08	May-30-19 00:15	May-30-19 00:37
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		128 5.00	327 4.96	1490 25.2	870 4.96	776 4.98	1160 5.05
TPH by SW8015 Mod	<i>Extracted:</i>	May-29-19 17:00	May-29-19 17:00	May-29-19 17:00	May-29-19 17:00	May-29-19 17:00	May-29-19 17:00
	<i>Analyzed:</i>	May-29-19 22:04	May-29-19 23:02	May-29-19 23:21	May-29-19 23:41	May-30-19 00:00	May-30-19 00:19
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		238 15.0	<15.0 15.0	<15.0 15.0	36.0 14.9	37.8 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		45.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Total TPH		283 15.0	<15.0 15.0	<15.0 15.0	36.0 14.9	37.8 15.0	<15.0 15.0
Total GRO-DRO		238 15.0	<15.0 15.0	<15.0 15.0	36.0 14.9	37.8 15.0	<15.0 15.0

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

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

Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 625763

LT Environmental, Inc., Arvada, CO

Project Name: JRU L38 @ JRU 19



Project Id: C1291814B
Contact: Ashley Ager
Project Location: Delaware Basin

Date Received in Lab: Wed May-29-19 12:15 pm
Report Date: 31-MAY-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	625763-007	625763-008	625763-009	625763-010		
	<i>Field Id:</i>	FS18	SW13	SW14	SW15		
	<i>Depth:</i>	4-9 ft	0-8 ft	0-8 ft	0-4 ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	May-24-19 11:40	May-23-19 15:35	May-23-19 15:45	May-24-19 09:50		
BTEX by EPA 8021B	<i>Extracted:</i>	May-30-19 16:00	May-30-19 16:00	May-30-19 16:00	May-30-19 16:00		
	<i>Analyzed:</i>	May-31-19 02:58	May-31-19 04:12	May-31-19 04:31	May-31-19 04:50		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
Toluene		<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
Ethylbenzene		<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
m,p-Xylenes		<0.00398 0.00398	<0.00403 0.00403	<0.00398 0.00398	<0.00399 0.00399		
o-Xylene		<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
Total Xylenes		<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
Total BTEX		<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
Chloride by EPA 300	<i>Extracted:</i>	May-29-19 15:45	May-29-19 15:45	May-29-19 15:45	May-29-19 15:45		
	<i>Analyzed:</i>	May-30-19 00:44	May-30-19 00:51	May-30-19 00:59	May-30-19 01:06		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		979 5.00	1170 4.99	1740 24.8	396 4.97		
TPH by SW8015 Mod	<i>Extracted:</i>	May-29-19 17:00	May-29-19 17:00	May-29-19 17:00	May-29-19 17:00		
	<i>Analyzed:</i>	May-30-19 00:39	May-30-19 00:58	May-30-19 01:18	May-30-19 01:37		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	20.3 15.0	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		<15.0 15.0	1270 15.0	1530 15.0	1030 15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	297 15.0	327 15.0	244 15.0		
Total TPH		<15.0 15.0	1590 15.0	1860 15.0	1270 15.0		
Total GRO-DRO		<15.0 15.0	1290 15.0	1530 15.0	1030 15.0		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.
The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.
XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.
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Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **FS12**
Lab Sample Id: 625763-001

Matrix: Soil
Date Collected: 05.23.19 08.20

Date Received: 05.29.19 12.15
Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090542

Date Prep: 05.29.19 15.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	128	5.00	mg/kg	05.29.19 23.53		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090591

Date Prep: 05.29.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 22.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	238	15.0	mg/kg	05.29.19 22.04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	45.0	15.0	mg/kg	05.29.19 22.04		1
Total TPH	PHC635	283	15.0	mg/kg	05.29.19 22.04		1
Total GRO-DRO	PHC628	238	15.0	mg/kg	05.29.19 22.04		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.29.19 22.04	
o-Terphenyl	84-15-1	93	%	70-135	05.29.19 22.04	



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **FS12**
Lab Sample Id: 625763-001

Matrix: Soil
Date Collected: 05.23.19 08.20

Date Received: 05.29.19 12.15
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090683

Date Prep: 05.30.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.31.19 01.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.31.19 01.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.31.19 01.04	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.31.19 01.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.31.19 01.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.31.19 01.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.31.19 01.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	70-130	05.31.19 01.04		
4-Bromofluorobenzene	460-00-4	135	%	70-130	05.31.19 01.04	**	



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **FS13**
Lab Sample Id: 625763-002

Matrix: Soil
Date Collected: 05.23.19 08.25

Date Received: 05.29.19 12.15
Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090542

Date Prep: 05.29.19 15.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	327	4.96	mg/kg	05.29.19 23.32		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090591

Date Prep: 05.29.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 23.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 23.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 23.02	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 23.02	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 23.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	05.29.19 23.02	
o-Terphenyl	84-15-1	92	%	70-135	05.29.19 23.02	



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **FS13**
Lab Sample Id: 625763-002

Matrix: Soil
Date Collected: 05.23.19 08.25

Date Received: 05.29.19 12.15
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090683

Date Prep: 05.30.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.31.19 01.23	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.31.19 01.23	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	05.31.19 01.23	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	05.31.19 01.23	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	05.31.19 01.23	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	05.31.19 01.23	U	1
Total BTEX		<0.00198	0.00198	mg/kg	05.31.19 01.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	05.31.19 01.23		
4-Bromofluorobenzene	460-00-4	116	%	70-130	05.31.19 01.23		



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **FS14**
Lab Sample Id: 625763-003

Matrix: Soil
Date Collected: 05.23.19 14.35

Date Received: 05.29.19 12.15
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090542

Date Prep: 05.29.19 15.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1490	25.2	mg/kg	05.30.19 02.55		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090591

Date Prep: 05.29.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 23.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 23.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 23.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 23.21	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 23.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	05.29.19 23.21	
o-Terphenyl	84-15-1	92	%	70-135	05.29.19 23.21	



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **FS14**
Lab Sample Id: 625763-003

Matrix: Soil
Date Collected: 05.23.19 14.35

Date Received: 05.29.19 12.15
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.30.19 16.00

Basis: Wet Weight

Seq Number: 3090683

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.31.19 01.42	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.31.19 01.42	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.31.19 01.42	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.31.19 01.42	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.31.19 01.42	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.31.19 01.42	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.31.19 01.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	05.31.19 01.42		
1,4-Difluorobenzene	540-36-3	97	%	70-130	05.31.19 01.42		



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **FS15**
Lab Sample Id: 625763-004

Matrix: Soil
Date Collected: 05.24.19 10.00

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090542

Date Prep: 05.29.19 15.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	870	4.96	mg/kg	05.30.19 00.08		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090591

Date Prep: 05.29.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	05.29.19 23.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	36.0	14.9	mg/kg	05.29.19 23.41		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	05.29.19 23.41	U	1
Total TPH	PHC635	36.0	14.9	mg/kg	05.29.19 23.41		1
Total GRO-DRO	PHC628	36.0	14.9	mg/kg	05.29.19 23.41		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	05.29.19 23.41	
o-Terphenyl	84-15-1	93	%	70-135	05.29.19 23.41	



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **FS15**
Lab Sample Id: 625763-004

Matrix: Soil
Date Collected: 05.24.19 10.00

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090683

Date Prep: 05.30.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.31.19 02.01	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.31.19 02.01	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.31.19 02.01	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.31.19 02.01	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.31.19 02.01	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.31.19 02.01	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.31.19 02.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	05.31.19 02.01		
4-Bromofluorobenzene	460-00-4	118	%	70-130	05.31.19 02.01		



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **FS16**
Lab Sample Id: 625763-005

Matrix: Soil
Date Collected: 05.24.19 10.02

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300
Tech: CHE
Analyst: CHE
Seq Number: 3090542

Date Prep: 05.29.19 15.45

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	776	4.98	mg/kg	05.30.19 00.15		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090591

Date Prep: 05.29.19 17.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.30.19 00.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	37.8	15.0	mg/kg	05.30.19 00.00		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.30.19 00.00	U	1
Total TPH	PHC635	37.8	15.0	mg/kg	05.30.19 00.00		1
Total GRO-DRO	PHC628	37.8	15.0	mg/kg	05.30.19 00.00		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.30.19 00.00	
o-Terphenyl	84-15-1	91	%	70-135	05.30.19 00.00	



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **FS16**
Lab Sample Id: 625763-005

Matrix: Soil
Date Collected: 05.24.19 10.02

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090683

Prep Method: SW5030B

% Moisture:

Date Prep: 05.30.19 16.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.31.19 02.20	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.31.19 02.20	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.31.19 02.20	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.31.19 02.20	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.31.19 02.20	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.31.19 02.20	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.31.19 02.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	05.31.19 02.20		
1,4-Difluorobenzene	540-36-3	95	%	70-130	05.31.19 02.20		



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **FS17**
Lab Sample Id: 625763-006

Matrix: Soil
Date Collected: 05.24.19 11.35

Date Received: 05.29.19 12.15
Sample Depth: 4 - 9 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090542

Date Prep: 05.29.19 15.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1160	5.05	mg/kg	05.30.19 00.37		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090591

Date Prep: 05.29.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.30.19 00.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.30.19 00.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.30.19 00.19	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.30.19 00.19	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.30.19 00.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	05.30.19 00.19	
o-Terphenyl	84-15-1	92	%	70-135	05.30.19 00.19	



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **FS17**
Lab Sample Id: 625763-006

Matrix: Soil
Date Collected: 05.24.19 11.35

Date Received: 05.29.19 12.15
Sample Depth: 4 - 9 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090683

Date Prep: 05.30.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.31.19 02.39	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.31.19 02.39	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.31.19 02.39	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.31.19 02.39	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.31.19 02.39	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.31.19 02.39	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.31.19 02.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	130	%	70-130	05.31.19 02.39		
1,4-Difluorobenzene	540-36-3	92	%	70-130	05.31.19 02.39		



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **FS18**
Lab Sample Id: 625763-007

Matrix: Soil
Date Collected: 05.24.19 11.40

Date Received: 05.29.19 12.15
Sample Depth: 4 - 9 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090542

Date Prep: 05.29.19 15.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	979	5.00	mg/kg	05.30.19 00.44		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090591

Date Prep: 05.29.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.30.19 00.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.30.19 00.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.30.19 00.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.30.19 00.39	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.30.19 00.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	05.30.19 00.39	
o-Terphenyl	84-15-1	92	%	70-135	05.30.19 00.39	



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **FS18**
Lab Sample Id: 625763-007

Matrix: Soil
Date Collected: 05.24.19 11.40

Date Received: 05.29.19 12.15
Sample Depth: 4 - 9 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090683

Date Prep: 05.30.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.31.19 02.58	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.31.19 02.58	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.31.19 02.58	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.31.19 02.58	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.31.19 02.58	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.31.19 02.58	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.31.19 02.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	05.31.19 02.58		
1,4-Difluorobenzene	540-36-3	96	%	70-130	05.31.19 02.58		



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **SW13**
Lab Sample Id: 625763-008

Matrix: Soil
Date Collected: 05.23.19 15.35

Date Received: 05.29.19 12.15
Sample Depth: 0 - 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090542

Date Prep: 05.29.19 15.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1170	4.99	mg/kg	05.30.19 00.51		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090591

Date Prep: 05.29.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	20.3	15.0	mg/kg	05.30.19 00.58		1
Diesel Range Organics (DRO)	C10C28DRO	1270	15.0	mg/kg	05.30.19 00.58		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	297	15.0	mg/kg	05.30.19 00.58		1
Total TPH	PHC635	1590	15.0	mg/kg	05.30.19 00.58		1
Total GRO-DRO	PHC628	1290	15.0	mg/kg	05.30.19 00.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	05.30.19 00.58	
o-Terphenyl	84-15-1	97	%	70-135	05.30.19 00.58	



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **SW13**
Lab Sample Id: 625763-008

Matrix: Soil
Date Collected: 05.23.19 15.35

Date Received: 05.29.19 12.15
Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090683

Date Prep: 05.30.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.31.19 04.12	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.31.19 04.12	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.31.19 04.12	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	05.31.19 04.12	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.31.19 04.12	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.31.19 04.12	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.31.19 04.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	70-130	05.31.19 04.12		
4-Bromofluorobenzene	460-00-4	113	%	70-130	05.31.19 04.12		



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **SW14**
Lab Sample Id: 625763-009

Matrix: Soil
Date Collected: 05.23.19 15.45

Date Received: 05.29.19 12.15
Sample Depth: 0 - 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090542

Date Prep: 05.29.19 15.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1740	24.8	mg/kg	05.30.19 00.59		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090591

Date Prep: 05.29.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.30.19 01.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	1530	15.0	mg/kg	05.30.19 01.18		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	327	15.0	mg/kg	05.30.19 01.18		1
Total TPH	PHC635	1860	15.0	mg/kg	05.30.19 01.18		1
Total GRO-DRO	PHC628	1530	15.0	mg/kg	05.30.19 01.18		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	05.30.19 01.18	
o-Terphenyl	84-15-1	104	%	70-135	05.30.19 01.18	



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **SW14**
Lab Sample Id: 625763-009

Matrix: Soil
Date Collected: 05.23.19 15.45

Date Received: 05.29.19 12.15
Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090683

Date Prep: 05.30.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.31.19 04.31	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.31.19 04.31	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.31.19 04.31	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.31.19 04.31	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.31.19 04.31	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.31.19 04.31	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.31.19 04.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	05.31.19 04.31		
1,4-Difluorobenzene	540-36-3	97	%	70-130	05.31.19 04.31		



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **SW15**
Lab Sample Id: 625763-010

Matrix: Soil
Date Collected: 05.24.19 09.50

Date Received: 05.29.19 12.15
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090542

Date Prep: 05.29.19 15.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	396	4.97	mg/kg	05.30.19 01.06		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090591

Date Prep: 05.29.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.30.19 01.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	1030	15.0	mg/kg	05.30.19 01.37		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	244	15.0	mg/kg	05.30.19 01.37		1
Total TPH	PHC635	1270	15.0	mg/kg	05.30.19 01.37		1
Total GRO-DRO	PHC628	1030	15.0	mg/kg	05.30.19 01.37		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	05.30.19 01.37	
o-Terphenyl	84-15-1	98	%	70-135	05.30.19 01.37	



Certificate of Analytical Results 625763



LT Environmental, Inc., Arvada, CO

JRU L38 @ JRU 19

Sample Id: **SW15**
Lab Sample Id: 625763-010

Matrix: Soil
Date Collected: 05.24.19 09.50

Date Received: 05.29.19 12.15
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090683

Date Prep: 05.30.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.31.19 04.50	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.31.19 04.50	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.31.19 04.50	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.31.19 04.50	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.31.19 04.50	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.31.19 04.50	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.31.19 04.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	05.31.19 04.50		
4-Bromofluorobenzene	460-00-4	118	%	70-130	05.31.19 04.50		

- 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 625763

LT Environmental, Inc.

JRU L38 @ JRU 19

Analytical Method: Chloride by EPA 300

Seq Number: 3090542

MB Sample Id: 7678782-1-BLK

Matrix: Solid

LCS Sample Id: 7678782-1-BKS

Prep Method: E300P

Date Prep: 05.29.19

LCSD Sample Id: 7678782-1-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	231	92	231	92	90-110	0	20	mg/kg	05.29.19 23:17	

Analytical Method: Chloride by EPA 300

Seq Number: 3090542

Parent Sample Id: 625763-002

Matrix: Soil

MS Sample Id: 625763-002 S

Prep Method: E300P

Date Prep: 05.29.19

MSD Sample Id: 625763-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	327	248	547	89	540	86	90-110	1	20	mg/kg	05.30.19 11:14	X

Analytical Method: Chloride by EPA 300

Seq Number: 3090542

Parent Sample Id: 625812-001

Matrix: Soil

MS Sample Id: 625812-001 S

Prep Method: E300P

Date Prep: 05.29.19

MSD Sample Id: 625812-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.857	250	263	105	262	105	90-110	0	20	mg/kg	05.30.19 01:20	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3090591

MB Sample Id: 7678858-1-BLK

Matrix: Solid

LCS Sample Id: 7678858-1-BKS

Prep Method: TX1005P

Date Prep: 05.29.19

LCSD Sample Id: 7678858-1-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)	13.1	1000	1090	109	1100	110	70-135	1	20	mg/kg	05.29.19 21:26	
Diesel Range Organics (DRO)	10.9	1000	1010	101	1010	101	70-135	0	20	mg/kg	05.29.19 21:26	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		120		123		70-135	%	05.29.19 21:26
o-Terphenyl	100		114		116		70-135	%	05.29.19 21:26

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

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

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

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



QC Summary 625763

LT Environmental, Inc.

JRU L38 @ JRU 19

Analytical Method: TPH by SW8015 Mod

Seq Number: 3090591

Parent Sample Id: 625763-001

Matrix: Soil

MS Sample Id: 625763-001 S

Prep Method: TX1005P

Date Prep: 05.29.19

MSD Sample Id: 625763-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	13.9	1000	1100	109	1100	109	70-135	0	20	mg/kg	05.29.19 22:24	
Diesel Range Organics (DRO)	238	1000	1140	90	1150	91	70-135	1	20	mg/kg	05.29.19 22:24	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	118		114		70-135	%	05.29.19 22:24
o-Terphenyl	113		105		70-135	%	05.29.19 22:24

Analytical Method: BTEX by EPA 8021B

Seq Number: 3090683

MB Sample Id: 7678917-1-BLK

Matrix: Solid

LCS Sample Id: 7678917-1-BKS

Prep Method: SW5030B

Date Prep: 05.30.19

LCSD Sample Id: 7678917-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0924	93	0.0954	94	70-130	3	35	mg/kg	05.30.19 22:15	
Toluene	<0.00199	0.0994	0.0970	98	0.101	100	70-130	4	35	mg/kg	05.30.19 22:15	
Ethylbenzene	<0.00199	0.0994	0.108	109	0.114	113	70-130	5	35	mg/kg	05.30.19 22:15	
m,p-Xylenes	<0.00398	0.199	0.231	116	0.242	120	70-130	5	35	mg/kg	05.30.19 22:15	
o-Xylene	<0.00199	0.0994	0.111	112	0.117	116	70-130	5	35	mg/kg	05.30.19 22:15	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		89		88		70-130	%	05.30.19 22:15
4-Bromofluorobenzene	105		103		104		70-130	%	05.30.19 22:15

Analytical Method: BTEX by EPA 8021B

Seq Number: 3090683

Parent Sample Id: 626012-001

Matrix: Soil

MS Sample Id: 626012-001 S

Prep Method: SW5030B

Date Prep: 05.30.19

MSD Sample Id: 626012-001 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	0.0850	85	0.0846	85	70-130	0	35	mg/kg	05.30.19 22:53	
Toluene	<0.00200	0.100	0.0900	90	0.0873	88	70-130	3	35	mg/kg	05.30.19 22:53	
Ethylbenzene	<0.00200	0.100	0.0996	100	0.0949	95	70-130	5	35	mg/kg	05.30.19 22:53	
m,p-Xylenes	<0.00400	0.200	0.213	107	0.202	102	70-130	5	35	mg/kg	05.30.19 22:53	
o-Xylene	<0.00200	0.100	0.103	103	0.0978	98	70-130	5	35	mg/kg	05.30.19 22:53	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		91		70-130	%	05.30.19 22:53
4-Bromofluorobenzene	109		107		70-130	%	05.30.19 22:53

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

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

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:

10457143

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

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Page 1 of 1

Project Manager:	Ashley Ager	Bill to: (if different)	Kyle Litrel
Company Name:	LT Environmental Inc	Company Name:	XTO Energy
Address:	3300 N. A Street	Address:	804 E. Greave Street
City, State ZIP:	Midland TX 79705	City, State ZIP:	Carsbad NM 88220
Phone:	432-704-5178	Email:	agera@ltenv.com abeyes@ltenv.com

Project Name:	JEC138@JEC19	Turn Around	
Project Number:	01291814B	Routine	☒
P.O. Number:	22P-4980	Rush:	
Sampler's Name:	Anna Byers	Due Date:	5/31/15

SAMPLE RECEIPT	Temp Blank:	Yes ☐ No ☒	Well Ice:	Yes ☐ No ☒
Temperature (°C):	0.0/0.0	Thermometer ID:	128	
Received In tact:	Yes ☒ No ☐	Correction Factor:	-0.1	
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:		
Sample Custody Seals:	Yes ☒ No ☐ N/A			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	ANALYSIS REQUEST													Work Order Notes
FS12	S	5/23/14	0820	1.5'	1	TPH (EPA 8015)													
FS13	S		0825	1.5'	1	BTEX (EPA 0-8021)													
FS14	S		1435	8'	1	Chloride (EPA 800.0)													
FS15	S	5/24/14	1000	4'	1														
FS16	S		1002	4'	1														
FS17	S		1135	4-9'	1														
FS18	S		1140	4-9'	1														
SW13	S	5/23/14	1535	0-8'	1														
SW14	S	5/23/14	1545	0-8'	1														
SW15	S	5/24/14	0950	0-4'	1														

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 AI Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SIO2 Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Anna Byers	[Signature]	5/24/14 @ 1025	[Signature]	[Signature]	5/29/14



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 05/29/2019 12:15:00 PM

Work Order #: 625763

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

Brianna Teel

Date: 05/29/2019

Checklist reviewed by:

Kalei Stout

Kalei Stout

Date: 05/29/2019

Analytical Report 626227

for
LT Environmental, Inc.

Project Manager: Ashley Ager

JRU 138 @ JRU 19

012918148

04-JUN-19

Collected By: Client



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

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04-JUN-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **626227**

JRU 138 @ JRU 19

Project Address: Delaware Basin

Ashley Ager:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 626227. 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. 626227 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

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 626227



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS20	S	05-30-19 08:50	8 ft	626227-001
SW17	S	05-30-19 09:35	0 - 8 ft	626227-002
SW18	S	05-30-19 09:45	0 - 8 ft	626227-003



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *JRU 138 @ JRU 19*

Project ID: 012918148
Work Order Number(s): 626227

Report Date: 04-JUN-19
Date Received: 06/03/2019

Sample receipt non conformance and comments:

None

Sample receipt non conformance and comments per sample:

None

Analytical non conformance and comments:

Batch: LBA-3091048 TPH by SW8015 Mod

Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 626240-001 S, 626240-001 SD.

Batch: LBA-3091063 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 626227-001, 626227-003, 626227-002.

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



Certificate of Analysis Summary 626227

LT Environmental, Inc., Arvada, CO

Project Name: JRU 138 @ JRU 19



Project Id: 012918148
Contact: Ashley Ager
Project Location: Delaware Basin

Date Received in Lab: Mon Jun-03-19 07:35 am
Report Date: 04-JUN-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626227-001	626227-002	626227-003			
	Field Id:	FS20	SW17	SW18			
	Depth:	8- ft	0-8 ft	0-8 ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	May-30-19 08:50	May-30-19 09:35	May-30-19 09:45			
BTEX by EPA 8021B	Extracted:	Jun-03-19 11:00	Jun-03-19 11:00	Jun-03-19 11:00			
	Analyzed:	Jun-03-19 19:11	Jun-03-19 19:31	Jun-03-19 19:51			
	Units/RL:	mg/kg	mg/kg	mg/kg			
		RL	RL	RL			
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201			
Toluene		0.154 0.00200	0.0199 0.00199	0.0160 0.00201			
Ethylbenzene		0.0329 0.00200	0.00510 0.00199	0.00395 0.00201			
m,p-Xylenes		0.0872 0.00399	0.0204 0.00398	0.0153 0.00402			
o-Xylene		0.0511 0.00200	0.0103 0.00199	0.00697 0.00201			
Total Xylenes		0.138 0.00200	0.0307 0.00199	0.0223 0.00201			
Total BTEX		0.325 0.00200	0.0557 0.00199	0.0422 0.00201			
Chloride by EPA 300	Extracted:	Jun-03-19 14:30	Jun-03-19 14:30	Jun-03-19 14:30			
	Analyzed:	Jun-03-19 15:59	Jun-03-19 16:25	Jun-03-19 16:30			
	Units/RL:	mg/kg	mg/kg	mg/kg			
		RL	RL	RL			
Chloride		322 5.05	1080 4.96	621 5.00			
TPH by SW8015 Mod	Extracted:	Jun-03-19 17:00	Jun-03-19 17:00	Jun-03-19 17:00			
	Analyzed:	Jun-03-19 21:18	Jun-03-19 21:43	Jun-03-19 22:08			
	Units/RL:	mg/kg	mg/kg	mg/kg			
		RL	RL	RL			
Gasoline Range Hydrocarbons (GRO)		143 14.9	55.1 15.0	58.4 15.0			
Diesel Range Organics (DRO)		783 14.9	481 15.0	854 15.0			
Motor Oil Range Hydrocarbons (MRO)		47.6 14.9	47.4 15.0	56.1 15.0			
Total TPH		974 14.9	584 15.0	969 15.0			
Total GRO-DRO		926 14.9	536 15.0	912 15.0			

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

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

Version: 1.0%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 626227



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS20**
Lab Sample Id: 626227-001

Matrix: Soil
Date Collected: 05.30.19 08.50

Date Received: 06.03.19 07.35
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091011

Date Prep: 06.03.19 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	322	5.05	mg/kg	06.03.19 15.59		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	143	14.9	mg/kg	06.03.19 21.18		1
Diesel Range Organics (DRO)	C10C28DRO	783	14.9	mg/kg	06.03.19 21.18		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	47.6	14.9	mg/kg	06.03.19 21.18		1
Total TPH	PHC635	974	14.9	mg/kg	06.03.19 21.18		1
Total GRO-DRO	PHC628	926	14.9	mg/kg	06.03.19 21.18		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	130	%	70-135	06.03.19 21.18	
o-Terphenyl	84-15-1	109	%	70-135	06.03.19 21.18	



Certificate of Analytical Results 626227



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS20**
Lab Sample Id: 626227-001

Matrix: Soil
Date Collected: 05.30.19 08.50

Date Received: 06.03.19 07.35
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Date Prep: 06.03.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.03.19 19.11	U	1
Toluene	108-88-3	0.154	0.00200	mg/kg	06.03.19 19.11		1
Ethylbenzene	100-41-4	0.0329	0.00200	mg/kg	06.03.19 19.11		1
m,p-Xylenes	179601-23-1	0.0872	0.00399	mg/kg	06.03.19 19.11		1
o-Xylene	95-47-6	0.0511	0.00200	mg/kg	06.03.19 19.11		1
Total Xylenes	1330-20-7	0.138	0.00200	mg/kg	06.03.19 19.11		1
Total BTEX		0.325	0.00200	mg/kg	06.03.19 19.11		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	328	%	70-130	06.03.19 19.11	**	
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.03.19 19.11		



Certificate of Analytical Results 626227



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW17**
Lab Sample Id: 626227-002

Matrix: Soil
Date Collected: 05.30.19 09.35

Date Received: 06.03.19 07.35
Sample Depth: 0 - 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091011

Date Prep: 06.03.19 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1080	4.96	mg/kg	06.03.19 16.25		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	55.1	15.0	mg/kg	06.03.19 21.43		1
Diesel Range Organics (DRO)	C10C28DRO	481	15.0	mg/kg	06.03.19 21.43		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	47.4	15.0	mg/kg	06.03.19 21.43		1
Total TPH	PHC635	584	15.0	mg/kg	06.03.19 21.43		1
Total GRO-DRO	PHC628	536	15.0	mg/kg	06.03.19 21.43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	06.03.19 21.43	
o-Terphenyl	84-15-1	89	%	70-135	06.03.19 21.43	



Certificate of Analytical Results 626227



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW17**
Lab Sample Id: 626227-002

Matrix: Soil
Date Collected: 05.30.19 09.35

Date Received: 06.03.19 07.35
Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Date Prep: 06.03.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.03.19 19.31	U	1
Toluene	108-88-3	0.0199	0.00199	mg/kg	06.03.19 19.31		1
Ethylbenzene	100-41-4	0.00510	0.00199	mg/kg	06.03.19 19.31		1
m,p-Xylenes	179601-23-1	0.0204	0.00398	mg/kg	06.03.19 19.31		1
o-Xylene	95-47-6	0.0103	0.00199	mg/kg	06.03.19 19.31		1
Total Xylenes	1330-20-7	0.0307	0.00199	mg/kg	06.03.19 19.31		1
Total BTEX		0.0557	0.00199	mg/kg	06.03.19 19.31		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.03.19 19.31		
4-Bromofluorobenzene	460-00-4	139	%	70-130	06.03.19 19.31	**	



Certificate of Analytical Results 626227



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW18**
Lab Sample Id: 626227-003

Matrix: Soil
Date Collected: 05.30.19 09.45

Date Received: 06.03.19 07.35
Sample Depth: 0 - 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091011

Date Prep: 06.03.19 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	621	5.00	mg/kg	06.03.19 16.30		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	58.4	15.0	mg/kg	06.03.19 22.08		1
Diesel Range Organics (DRO)	C10C28DRO	854	15.0	mg/kg	06.03.19 22.08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	56.1	15.0	mg/kg	06.03.19 22.08		1
Total TPH	PHC635	969	15.0	mg/kg	06.03.19 22.08		1
Total GRO-DRO	PHC628	912	15.0	mg/kg	06.03.19 22.08		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	130	%	70-135	06.03.19 22.08	
o-Terphenyl	84-15-1	124	%	70-135	06.03.19 22.08	



Certificate of Analytical Results 626227



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW18**
Lab Sample Id: 626227-003

Matrix: Soil
Date Collected: 05.30.19 09.45

Date Received: 06.03.19 07.35
Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Date Prep: 06.03.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.03.19 19.51	U	1
Toluene	108-88-3	0.0160	0.00201	mg/kg	06.03.19 19.51		1
Ethylbenzene	100-41-4	0.00395	0.00201	mg/kg	06.03.19 19.51		1
m,p-Xylenes	179601-23-1	0.0153	0.00402	mg/kg	06.03.19 19.51		1
o-Xylene	95-47-6	0.00697	0.00201	mg/kg	06.03.19 19.51		1
Total Xylenes	1330-20-7	0.0223	0.00201	mg/kg	06.03.19 19.51		1
Total BTEX		0.0422	0.00201	mg/kg	06.03.19 19.51		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.03.19 19.51		
4-Bromofluorobenzene	460-00-4	136	%	70-130	06.03.19 19.51	**	

- 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 626227

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: Chloride by EPA 300

Seq Number: 3091011

MB Sample Id: 7679058-1-BLK

Matrix: Solid

LCS Sample Id: 7679058-1-BKS

Prep Method: E300P

Date Prep: 06.03.19

LCSD Sample Id: 7679058-1-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	235	94	234	94	90-110	0	20	mg/kg	06.03.19 15:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3091011

Parent Sample Id: 626227-001

Matrix: Soil

MS Sample Id: 626227-001 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626227-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	322	253	575	100	571	98	90-110	1	20	mg/kg	06.03.19 16:04	

Analytical Method: Chloride by EPA 300

Seq Number: 3091011

Parent Sample Id: 626231-001

Matrix: Soil

MS Sample Id: 626231-001 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626231-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.71	250	270	104	267	103	90-110	1	20	mg/kg	06.03.19 17:16	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091048

MB Sample Id: 7679160-1-BLK

Matrix: Solid

LCS Sample Id: 7679160-1-BKS

Prep Method: TX1005P

Date Prep: 06.03.19

LCSD Sample Id: 7679160-1-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	1120	112	1170	117	70-135	4	20	mg/kg	06.03.19 19:12	
Diesel Range Organics (DRO)	<8.13	1000	1130	113	1190	119	70-135	5	20	mg/kg	06.03.19 19:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	80		70		129		70-135	%	06.03.19 19:12
o-Terphenyl	72		76		132		70-135	%	06.03.19 19:12

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 626227

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091048

Parent Sample Id: 626240-001

Matrix: Soil

MS Sample Id: 626240-001 S

Prep Method: TX1005P

Date Prep: 06.03.19

MSD Sample Id: 626240-001 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)	495	997	1660	117	1760	127	70-135	6	20	mg/kg	06.04.19 08:20	
Diesel Range Organics (DRO)	24300	997	18600	0	22300	0	70-135	18	20	mg/kg	06.04.19 08:20	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		121		70-135	%	06.04.19 08:20
o-Terphenyl	337	**	401	**	70-135	%	06.04.19 08:20

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091063

MB Sample Id: 7679177-1-BLK

Matrix: Solid

LCS Sample Id: 7679177-1-BKS

Prep Method: SW5030B

Date Prep: 06.03.19

LCSD Sample Id: 7679177-1-BSL

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000384	0.0998	0.0920	92	0.109	109	70-130	17	35	mg/kg	06.03.19 16:29	
Toluene	<0.000455	0.0998	0.0893	89	0.104	104	70-130	15	35	mg/kg	06.03.19 16:29	
Ethylbenzene	<0.000564	0.0998	0.0986	99	0.114	114	70-130	14	35	mg/kg	06.03.19 16:29	
m,p-Xylenes	<0.00101	0.200	0.201	101	0.233	117	70-130	15	35	mg/kg	06.03.19 16:29	
o-Xylene	<0.000344	0.0998	0.0961	96	0.113	113	70-130	16	35	mg/kg	06.03.19 16:29	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		98		105		70-130	%	06.03.19 16:29
4-Bromofluorobenzene	82		93		104		70-130	%	06.03.19 16:29

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091063

Parent Sample Id: 626228-001

Matrix: Soil

MS Sample Id: 626228-001 S

Prep Method: SW5030B

Date Prep: 06.03.19

MSD Sample Id: 626228-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0994	0.0972	98	0.105	104	70-130	8	35	mg/kg	06.03.19 17:10	
Toluene	<0.000453	0.0994	0.0923	93	0.102	101	70-130	10	35	mg/kg	06.03.19 17:10	
Ethylbenzene	<0.000561	0.0994	0.0982	99	0.110	109	70-130	11	35	mg/kg	06.03.19 17:10	
m,p-Xylenes	<0.00101	0.199	0.200	101	0.224	111	70-130	11	35	mg/kg	06.03.19 17:10	
o-Xylene	<0.000342	0.0994	0.0968	97	0.109	108	70-130	12	35	mg/kg	06.03.19 17:10	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		105		70-130	%	06.03.19 17:10
4-Bromofluorobenzene	104		108		70-130	%	06.03.19 17:10

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

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

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



www.xenoco.com Page 1 of 1

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

[illegible][illegible]

Sample Identification				Matrix	Date Sampled	Time Sampled	Depth	Number	TPH	BTE	Chlor	Sample Comments
FS20		S	5/30/19	0850	8'	1	X	X	X			
SW17		S		0935	0-8'	1	X	X	X			
SW18		S	↓	0945	0-8'	1	X	X	X			

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>Diana Byers</i>	<i>[Signature]</i>	05-31-14 10:13		<i>[Signature]</i>	06/3/14
3					0735
5					
6					

ORIGIN ID: CACA (281) 240-4200
 SAMPLE CUSTODY
 SAMPLE CUSTODY
 1089 N CANAL ST
 CARLSBAD, NM 88220
 UNITED STATES US

SHIP DATE: 31MAY19
 ACTWGT: 48.00 LB
 CAD: 114488676/NET4100
 DIMS: 24x13x13 IN

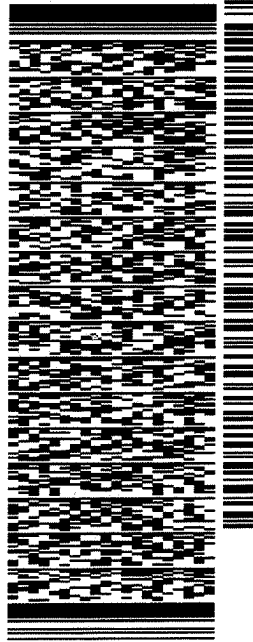
BILL SENDER

TO **SAMPLE RECEIVING MIDLAND**
FEDEx OFFICE PRINT & SHIP CENTER
FEDEx OFFICE PRINT & SHIP CENTER
200 W INTERSTATE 20

MIDLAND TX 79701

(432) 704-5440 REF:

PO: DEPT:



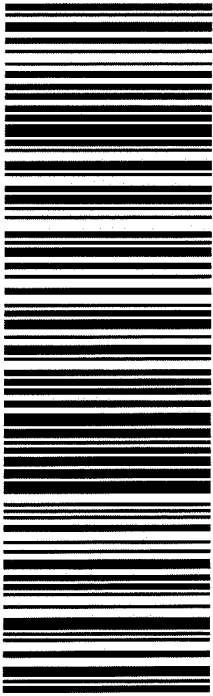
J191019010701uv

TRK# 7753 6207 1739
 0201

SATURDAY HOLD
PRIORITY OVERNIGHT

41 MAFA

HLD
 MAFKI
 LBB
 TX-US



5.5/5.1

565J1/D66C/23AD

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3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/03/2019 07:35:00 AM

Work Order #: 626227

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	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)?	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

Brianna Teel

Date: 06/03/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/03/2019

Analytical Report 626228

for
LT Environmental, Inc.

Project Manager: Ashley Ager

JRU 138 @ JRU 19

012918148

05-JUN-19

Collected By: Client



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

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



05-JUN-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **626228**

JRU 138 @ JRU 19

Project Address: Delaware Basin

Ashley Ager:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 626228. 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. 626228 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

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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Sample Cross Reference 626228



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW16	S	05-30-19 14:05	0 - 2 ft	626228-001
FS19	S	05-30-19 14:00	2 ft	626228-002



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *JRU 138 @ JRU 19*

Project ID: 012918148
Work Order Number(s): 626228

Report Date: 05-JUN-19
Date Received: 06/03/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3091063 BTEX by EPA 8021B

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



Certificate of Analysis Summary 626228

LT Environmental, Inc., Arvada, CO

Project Name: JRU 138 @ JRU 19



Project Id: 012918148
Contact: Ashley Ager
Project Location: Delaware Basin

Date Received in Lab: Mon Jun-03-19 07:35 am
Report Date: 05-JUN-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626228-001	626228-002				
	Field Id:	SW16	FS19				
	Depth:	0-2 ft	2- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	May-30-19 14:05	May-30-19 14:00				
BTEX by EPA 8021B	Extracted:	Jun-03-19 11:00	Jun-03-19 11:00				
	Analyzed:	Jun-03-19 18:31	Jun-03-19 18:51				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00199 0.00199	<0.00200 0.00200				
	Toluene	<0.00199 0.00199	<0.00200 0.00200				
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200				
m,p-Xylenes		<0.00398 0.00398	<0.00400 0.00400				
o-Xylene		<0.00199 0.00199	<0.00200 0.00200				
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200				
Total BTEX		<0.00199 0.00199	<0.00200 0.00200				
Chloride by EPA 300	Extracted:	Jun-03-19 14:30	Jun-03-19 14:30				
	Analyzed:	Jun-03-19 16:45	Jun-03-19 16:51				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	<5.04 5.04	274 4.95				
TPH by SW8015 Mod	Extracted:	Jun-04-19 17:00	Jun-04-19 17:00				
	Analyzed:	Jun-05-19 04:44	Jun-05-19 05:03				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0	<15.0 15.0				
	Diesel Range Organics (DRO)	<15.0 15.0	26.3 15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0				
Total TPH		<15.0 15.0	26.3 15.0				
Total GRO-DRO		<15.0 15.0	26.3 15.0				

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

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

Version: 1.0%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 626228



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW16**
Lab Sample Id: 626228-001

Matrix: Soil
Date Collected: 05.30.19 14.05

Date Received: 06.03.19 07.35
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091011

Date Prep: 06.03.19 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.04	5.04	mg/kg	06.03.19 16.45	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091231

Date Prep: 06.04.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.05.19 04.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.05.19 04.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.05.19 04.44	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.05.19 04.44	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.05.19 04.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	06.05.19 04.44	
o-Terphenyl	84-15-1	96	%	70-135	06.05.19 04.44	



Certificate of Analytical Results 626228



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW16**
Lab Sample Id: 626228-001

Matrix: Soil
Date Collected: 05.30.19 14.05

Date Received: 06.03.19 07.35
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Date Prep: 06.03.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.03.19 18.31	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.03.19 18.31	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.03.19 18.31	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.03.19 18.31	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.03.19 18.31	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.03.19 18.31	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.03.19 18.31	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		94	%	70-130	06.03.19 18.31	
4-Bromofluorobenzene	460-00-4		98	%	70-130	06.03.19 18.31	



Certificate of Analytical Results 626228



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS19**
Lab Sample Id: 626228-002

Matrix: Soil
Date Collected: 05.30.19 14.00

Date Received: 06.03.19 07.35
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091011

Date Prep: 06.03.19 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	274	4.95	mg/kg	06.03.19 16.51		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091231

Date Prep: 06.04.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.05.19 05.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	26.3	15.0	mg/kg	06.05.19 05.03		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.05.19 05.03	U	1
Total TPH	PHC635	26.3	15.0	mg/kg	06.05.19 05.03		1
Total GRO-DRO	PHC628	26.3	15.0	mg/kg	06.05.19 05.03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	06.05.19 05.03	
o-Terphenyl	84-15-1	94	%	70-135	06.05.19 05.03	



Certificate of Analytical Results 626228



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS19**
Lab Sample Id: 626228-002

Matrix: Soil
Date Collected: 05.30.19 14.00

Date Received: 06.03.19 07.35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Date Prep: 06.03.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.03.19 18.51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.03.19 18.51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.03.19 18.51	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.03.19 18.51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.03.19 18.51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.03.19 18.51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.03.19 18.51	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		88	%	70-130	06.03.19 18.51	
1,4-Difluorobenzene	540-36-3		99	%	70-130	06.03.19 18.51	

- 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 626228

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: Chloride by EPA 300

Seq Number: 3091011

MB Sample Id: 7679058-1-BLK

Matrix: Solid

LCS Sample Id: 7679058-1-BKS

Prep Method: E300P

Date Prep: 06.03.19

LCSD Sample Id: 7679058-1-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	235	94	234	94	90-110	0	20	mg/kg	06.03.19 15:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3091011

Parent Sample Id: 626227-001

Matrix: Soil

MS Sample Id: 626227-001 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626227-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	322	253	575	100	571	98	90-110	1	20	mg/kg	06.03.19 16:04	

Analytical Method: Chloride by EPA 300

Seq Number: 3091011

Parent Sample Id: 626231-001

Matrix: Soil

MS Sample Id: 626231-001 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626231-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.71	250	270	104	267	103	90-110	1	20	mg/kg	06.03.19 17:16	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091231

MB Sample Id: 7679239-1-BLK

Matrix: Solid

LCS Sample Id: 7679239-1-BKS

Prep Method: TX1005P

Date Prep: 06.04.19

LCSD Sample Id: 7679239-1-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	1180	118	1190	119	70-135	1	20	mg/kg	06.04.19 22:03	
Diesel Range Organics (DRO)	<8.13	1000	1180	118	1180	118	70-135	0	20	mg/kg	06.04.19 22:03	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		127		126		70-135	%	06.04.19 22:03
o-Terphenyl	111		120		127		70-135	%	06.04.19 22:03

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

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

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

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



QC Summary 626228

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091231

Parent Sample Id: 626455-001

Matrix: Soil

MS Sample Id: 626455-001 S

Prep Method: TX1005P

Date Prep: 06.04.19

MSD Sample Id: 626455-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	15.2	999	1140	113	1160	115	70-135	2	20	mg/kg	06.04.19 23:02	
Diesel Range Organics (DRO)	149	999	1220	107	1230	108	70-135	1	20	mg/kg	06.04.19 23:02	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		122		70-135	%	06.04.19 23:02
o-Terphenyl	102		114		70-135	%	06.04.19 23:02

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091063

MB Sample Id: 7679177-1-BLK

Matrix: Solid

LCS Sample Id: 7679177-1-BKS

Prep Method: SW5030B

Date Prep: 06.03.19

LCSD Sample Id: 7679177-1-BSL

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000384	0.0998	0.0920	92	0.109	109	70-130	17	35	mg/kg	06.03.19 16:29	
Toluene	<0.000455	0.0998	0.0893	89	0.104	104	70-130	15	35	mg/kg	06.03.19 16:29	
Ethylbenzene	<0.000564	0.0998	0.0986	99	0.114	114	70-130	14	35	mg/kg	06.03.19 16:29	
m,p-Xylenes	<0.00101	0.200	0.201	101	0.233	117	70-130	15	35	mg/kg	06.03.19 16:29	
o-Xylene	<0.000344	0.0998	0.0961	96	0.113	113	70-130	16	35	mg/kg	06.03.19 16:29	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		98		105		70-130	%	06.03.19 16:29
4-Bromofluorobenzene	82		93		104		70-130	%	06.03.19 16:29

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091063

Parent Sample Id: 626228-001

Matrix: Soil

MS Sample Id: 626228-001 S

Prep Method: SW5030B

Date Prep: 06.03.19

MSD Sample Id: 626228-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0994	0.0972	98	0.105	104	70-130	8	35	mg/kg	06.03.19 17:10	
Toluene	<0.000453	0.0994	0.0923	93	0.102	101	70-130	10	35	mg/kg	06.03.19 17:10	
Ethylbenzene	<0.000561	0.0994	0.0982	99	0.110	109	70-130	11	35	mg/kg	06.03.19 17:10	
m,p-Xylenes	<0.00101	0.199	0.200	101	0.224	111	70-130	11	35	mg/kg	06.03.19 17:10	
o-Xylene	<0.000342	0.0994	0.0968	97	0.109	108	70-130	12	35	mg/kg	06.03.19 17:10	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		105		70-130	%	06.03.19 17:10
4-Bromofluorobenzene	104		108		70-130	%	06.03.19 17:10

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

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

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



www.yanac.com Page 1 of 1

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

[illegible][illegible]

Sample Identification					Matrix	Date Sampled	Time Sampled	Depth	Number	TPH	BTEX	Chlor	Sample Comments
8W10		S	5/30/19	1405	0-2'	1	X	X	X				
ES19		S	5/30/19	1400	2'	1	X	X	X				

Total	200.7 / 6010	200.8 / 6020:	8RCRA	13PPM	Texas	11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO ₂	Na	Sr	Tl	Sn	U	V	Zn
<i>Circle Method(s) and Metal(s) to be analyzed</i>			TCLP	/SPLP	6010:	8RCRA	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Tl	U												
			Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.																															
			1631 / 245.1 / 7470 / 7471 : Hg																															

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>Anna Byers</i>	<i>[Signature]</i>	05-31-17 - 10:10a		<i>[Signature]</i>	06/3/19
					0735

ORIGIN ID: CACA (291) 240-4200
 SAMPLE CUSTODY
 SAMPLE CUSTODY
 1089 N CANAL ST
 CARLSBAD, NM 88220
 UNITED STATES US

SHIP DATE: 31MAY19
 ACTWGT: 48.00 LB
 CAD: 114488676/NINET4100
 DIMS: 24x13x13 IN
 BILL SENDER

TO **SAMPLE RECEIVING MIDLAND**

FEDEX OFFICE PRINT & SHIP CENTER
FEDEX OFFICE PRINT & SHIP CENTER
200 W INTERSTATE 20

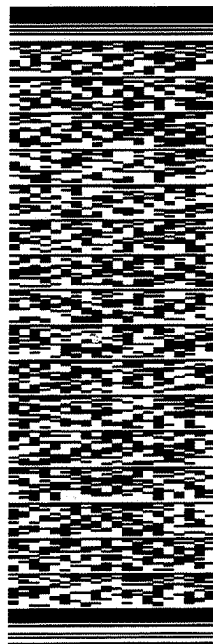
MIDLAND TX 79701

(432) 704-5440

REF:

PO:

DEPT:



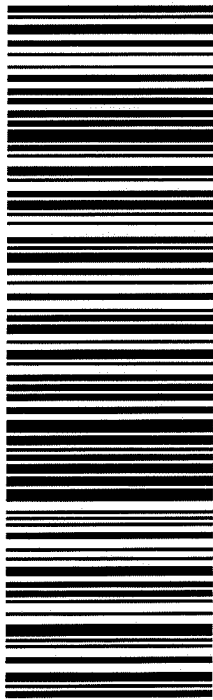
J191019010701uv

TRK# 7753 6207 1739
 0201

SATURDAY HOLD
PRIORITY OVERNIGHT

41 MAFA

HLD
 MAFKI
 LBB
 TX-US



5.5/5.1

565J1D66C/23AD

After printing this label:

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

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/03/2019 07:35:00 AM

Work Order #: 626228

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/03/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/03/2019

Analytical Report 626508

for
LT Environmental, Inc.

Project Manager: Dan Moir

JRU 138 @ JRU 19

012918148

06-JUN-19

Collected By: Client



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

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



06-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **626508**

JRU 138 @ JRU 19

Project Address: Delaware Basin

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) 626508. 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. 626508 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

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

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Sample Cross Reference 626508



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH33	S	05-31-19 15:45	0.5 ft	626508-001
PH33A	S	05-31-19 16:00	3.5 ft	626508-002
PH34	S	05-31-19 16:15	0.5 ft	626508-003
PH34A	S	05-31-19 16:30	3.5 ft	626508-004
FS21	S	05-31-19 10:55	5 ft	626508-005
SW19	S	05-31-19 10:50	0.5 ft	626508-006



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *JRU 138 @ JRU 19*

Project ID: 012918148
Work Order Number(s): 626508

Report Date: 06-JUN-19
Date Received: 06/05/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3091385 BTEX by EPA 8021B

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



Certificate of Analysis Summary 626508

LT Environmental, Inc., Arvada, CO

Project Name: JRU 138 @ JRU 19



Project Id: 012918148
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Wed Jun-05-19 12:23 pm
Report Date: 06-JUN-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	626508-001	626508-002	626508-003	626508-004	626508-005	626508-006
	<i>Field Id:</i>	PH33	PH33A	PH34	PH34A	FS21	SW19
	<i>Depth:</i>	0.5- ft	3.5- ft	0.5- ft	3.5- ft	5- ft	0.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	May-31-19 15:45	May-31-19 16:00	May-31-19 16:15	May-31-19 16:30	May-31-19 10:55	May-31-19 10:50
BTEX by EPA 8021B	<i>Extracted:</i>	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00
	<i>Analyzed:</i>	Jun-06-19 09:20	Jun-06-19 09:39	Jun-06-19 09:58	Jun-06-19 22:17	Jun-06-19 22:36	Jun-06-19 22:55
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Toluene		<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	0.00371 0.00202	<0.00200 0.00200
Ethylbenzene		<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
m,p-Xylenes		<0.00403 0.00403	<0.00398 0.00398	<0.00397 0.00397	<0.00401 0.00401	0.00524 0.00403	<0.00400 0.00400
o-Xylene		<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	0.00361 0.00202	<0.00200 0.00200
Total Xylenes		<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	0.00885 0.00202	<0.00200 0.00200
Total BTEX		<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	0.0126 0.00202	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Jun-05-19 15:30	Jun-05-19 15:30	Jun-05-19 15:30	Jun-05-19 15:30	Jun-05-19 15:30	Jun-05-19 15:30
	<i>Analyzed:</i>	Jun-05-19 17:37	Jun-05-19 18:25	Jun-05-19 18:30	Jun-05-19 18:35	Jun-05-19 18:40	Jun-05-19 18:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		229 5.00	3340 25.0	10.3 5.00	1480 5.00	1370 25.0	570 5.03
TPH by SW8015 Mod	<i>Extracted:</i>	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00
	<i>Analyzed:</i>	Jun-05-19 23:14	Jun-06-19 00:02	Jun-06-19 00:27	Jun-06-19 00:51	Jun-06-19 01:15	Jun-06-19 01:40
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	29.2 14.9	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	34.8 15.0	<14.9 14.9	28.5 15.0	682 14.9	105 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	185 14.9	53.8 15.0
Total TPH		<15.0 15.0	34.8 15.0	<14.9 14.9	28.5 15.0	896 14.9	159 15.0
Total GRO-DRO		<15.0 15.0	34.8 15.0	<14.9 14.9	28.5 15.0	711 14.9	105 15.0

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 626508



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH33**
Lab Sample Id: 626508-001

Matrix: Soil
Date Collected: 05.31.19 15.45

Date Received: 06.05.19 12.23
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091335

Date Prep: 06.05.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	229	5.00	mg/kg	06.05.19 17.37		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091362

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.05.19 23.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.05.19 23.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.05.19 23.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.05.19 23.14	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.05.19 23.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	06.05.19 23.14	
o-Terphenyl	84-15-1	100	%	70-135	06.05.19 23.14	



Certificate of Analytical Results 626508



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH33**
Lab Sample Id: 626508-001

Matrix: Soil
Date Collected: 05.31.19 15.45

Date Received: 06.05.19 12.23
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091385

Date Prep: 06.05.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.06.19 09.20	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.06.19 09.20	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.06.19 09.20	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	06.06.19 09.20	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.06.19 09.20	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.06.19 09.20	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.06.19 09.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	72	%	70-130	06.06.19 09.20		
1,4-Difluorobenzene	540-36-3	106	%	70-130	06.06.19 09.20		



Certificate of Analytical Results 626508



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH33A**
Lab Sample Id: 626508-002

Matrix: Soil
Date Collected: 05.31.19 16.00

Date Received: 06.05.19 12.23
Sample Depth: 3.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091335

Date Prep: 06.05.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3340	25.0	mg/kg	06.05.19 18.25		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091362

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 00.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	34.8	15.0	mg/kg	06.06.19 00.02		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 00.02	U	1
Total TPH	PHC635	34.8	15.0	mg/kg	06.06.19 00.02		1
Total GRO-DRO	PHC628	34.8	15.0	mg/kg	06.06.19 00.02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	06.06.19 00.02	
o-Terphenyl	84-15-1	99	%	70-135	06.06.19 00.02	



Certificate of Analytical Results 626508



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH33A**
Lab Sample Id: 626508-002

Matrix: Soil
Date Collected: 05.31.19 16.00

Date Received: 06.05.19 12.23
Sample Depth: 3.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091385

Date Prep: 06.05.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.06.19 09.39	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.06.19 09.39	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.06.19 09.39	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.06.19 09.39	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.06.19 09.39	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.06.19 09.39	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.06.19 09.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	06.06.19 09.39		
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.06.19 09.39		



Certificate of Analytical Results 626508



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH34**
Lab Sample Id: 626508-003

Matrix: Soil
Date Collected: 05.31.19 16.15

Date Received: 06.05.19 12.23
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091335

Date Prep: 06.05.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.3	5.00	mg/kg	06.05.19 18.30		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091362

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.06.19 00.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.06.19 00.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.06.19 00.27	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.06.19 00.27	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.06.19 00.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	06.06.19 00.27	
o-Terphenyl	84-15-1	112	%	70-135	06.06.19 00.27	



Certificate of Analytical Results 626508



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH34**
Lab Sample Id: 626508-003

Matrix: Soil
Date Collected: 05.31.19 16.15

Date Received: 06.05.19 12.23
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091385

Date Prep: 06.05.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.06.19 09.58	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.06.19 09.58	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.06.19 09.58	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.06.19 09.58	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.06.19 09.58	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.06.19 09.58	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.06.19 09.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	06.06.19 09.58		
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.06.19 09.58		



Certificate of Analytical Results 626508



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH34A**
Lab Sample Id: 626508-004

Matrix: Soil
Date Collected: 05.31.19 16.30

Date Received: 06.05.19 12.23
Sample Depth: 3.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091335

Date Prep: 06.05.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1480	5.00	mg/kg	06.05.19 18.35		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091362

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 00.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	28.5	15.0	mg/kg	06.06.19 00.51		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 00.51	U	1
Total TPH	PHC635	28.5	15.0	mg/kg	06.06.19 00.51		1
Total GRO-DRO	PHC628	28.5	15.0	mg/kg	06.06.19 00.51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	06.06.19 00.51	
o-Terphenyl	84-15-1	97	%	70-135	06.06.19 00.51	



Certificate of Analytical Results 626508



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH34A**
Lab Sample Id: 626508-004

Matrix: Soil
Date Collected: 05.31.19 16.30

Date Received: 06.05.19 12.23
Sample Depth: 3.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091385

Date Prep: 06.05.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.06.19 22.17	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.06.19 22.17	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.06.19 22.17	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.06.19 22.17	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.06.19 22.17	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.06.19 22.17	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.06.19 22.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.06.19 22.17		
4-Bromofluorobenzene	460-00-4	93	%	70-130	06.06.19 22.17		



Certificate of Analytical Results 626508



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS21**
Lab Sample Id: 626508-005

Matrix: Soil
Date Collected: 05.31.19 10.55

Date Received: 06.05.19 12.23
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091335

Date Prep: 06.05.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1370	25.0	mg/kg	06.05.19 18.40		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091362

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	29.2	14.9	mg/kg	06.06.19 01.15		1
Diesel Range Organics (DRO)	C10C28DRO	682	14.9	mg/kg	06.06.19 01.15		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	185	14.9	mg/kg	06.06.19 01.15		1
Total TPH	PHC635	896	14.9	mg/kg	06.06.19 01.15		1
Total GRO-DRO	PHC628	711	14.9	mg/kg	06.06.19 01.15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	06.06.19 01.15	
o-Terphenyl	84-15-1	95	%	70-135	06.06.19 01.15	



Certificate of Analytical Results 626508



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS21**
Lab Sample Id: 626508-005

Matrix: Soil
Date Collected: 05.31.19 10.55

Date Received: 06.05.19 12.23
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091385

Date Prep: 06.05.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.06.19 22.36	U	1
Toluene	108-88-3	0.00371	0.00202	mg/kg	06.06.19 22.36		1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.06.19 22.36	U	1
m,p-Xylenes	179601-23-1	0.00524	0.00403	mg/kg	06.06.19 22.36		1
o-Xylene	95-47-6	0.00361	0.00202	mg/kg	06.06.19 22.36		1
Total Xylenes	1330-20-7	0.00885	0.00202	mg/kg	06.06.19 22.36		1
Total BTEX		0.0126	0.00202	mg/kg	06.06.19 22.36		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.06.19 22.36		
4-Bromofluorobenzene	460-00-4	110	%	70-130	06.06.19 22.36		



Certificate of Analytical Results 626508



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW19**
Lab Sample Id: 626508-006

Matrix: Soil
Date Collected: 05.31.19 10.50

Date Received: 06.05.19 12.23
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091335

Date Prep: 06.05.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	570	5.03	mg/kg	06.05.19 18.46		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091362

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 01.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	105	15.0	mg/kg	06.06.19 01.40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	53.8	15.0	mg/kg	06.06.19 01.40		1
Total TPH	PHC635	159	15.0	mg/kg	06.06.19 01.40		1
Total GRO-DRO	PHC628	105	15.0	mg/kg	06.06.19 01.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.06.19 01.40	
o-Terphenyl	84-15-1	71	%	70-135	06.06.19 01.40	



Certificate of Analytical Results 626508



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW19**
Lab Sample Id: 626508-006

Matrix: Soil
Date Collected: 05.31.19 10.50

Date Received: 06.05.19 12.23
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091385

Prep Method: SW5030B

% Moisture:

Date Prep: 06.05.19 16.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.06.19 22.55	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.06.19 22.55	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.06.19 22.55	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.06.19 22.55	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.06.19 22.55	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.06.19 22.55	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.06.19 22.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	06.06.19 22.55		
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.06.19 22.55		

- 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 626508

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: Chloride by EPA 300

Seq Number: 3091335

MB Sample Id: 7679323-1-BLK

Matrix: Solid

LCS Sample Id: 7679323-1-BKS

Prep Method: E300P

Date Prep: 06.05.19

LCSD Sample Id: 7679323-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	241	96	241	96	90-110	0	20	mg/kg	06.05.19 16:13	

Analytical Method: Chloride by EPA 300

Seq Number: 3091335

Parent Sample Id: 626504-004

Matrix: Soil

MS Sample Id: 626504-004 S

Prep Method: E300P

Date Prep: 06.05.19

MSD Sample Id: 626504-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	107	261	403	113	381	105	90-110	6	20	mg/kg	06.05.19 16:29	X

Analytical Method: Chloride by EPA 300

Seq Number: 3091335

Parent Sample Id: 626508-001

Matrix: Soil

MS Sample Id: 626508-001 S

Prep Method: E300P

Date Prep: 06.05.19

MSD Sample Id: 626508-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	229	250	480	100	489	104	90-110	2	20	mg/kg	06.05.19 17:43	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091362

MB Sample Id: 7679343-1-BLK

Matrix: Solid

LCS Sample Id: 7679343-1-BKS

Prep Method: TX1005P

Date Prep: 06.05.19

LCSD Sample Id: 7679343-1-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	999	100	974	97	70-135	3	20	mg/kg	06.05.19 17:56	
Diesel Range Organics (DRO)	<8.13	1000	990	99	975	98	70-135	2	20	mg/kg	06.05.19 17:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		104		102		70-135	%	06.05.19 17:56
o-Terphenyl	72		103		104		70-135	%	06.05.19 17:56

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

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

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

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



QC Summary 626508

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091362

Parent Sample Id: 626506-001

Matrix: Soil

MS Sample Id: 626506-001 S

Prep Method: TX1005P

Date Prep: 06.05.19

MSD Sample Id: 626506-001 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)	10.9	999	922	91	1010	100	70-135	9	20	mg/kg	06.05.19 19:10	
Diesel Range Organics (DRO)	55.8	999	964	91	1040	99	70-135	8	20	mg/kg	06.05.19 19:10	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	89		95		70-135	%	06.05.19 19:10
o-Terphenyl	93		96		70-135	%	06.05.19 19:10

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091385

MB Sample Id: 7679296-1-BLK

Matrix: Solid

LCS Sample Id: 7679296-1-BKS

Prep Method: SW5030B

Date Prep: 06.05.19

LCSD Sample Id: 7679296-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0994	0.108	109	0.114	114	70-130	5	35	mg/kg	06.06.19 06:12	
Toluene	<0.000453	0.0994	0.105	106	0.110	110	70-130	5	35	mg/kg	06.06.19 06:12	
Ethylbenzene	<0.000561	0.0994	0.114	115	0.118	118	70-130	3	35	mg/kg	06.06.19 06:12	
m,p-Xylenes	<0.00101	0.199	0.230	116	0.239	120	70-130	4	35	mg/kg	06.06.19 06:12	
o-Xylene	<0.000342	0.0994	0.113	114	0.119	119	70-130	5	35	mg/kg	06.06.19 06:12	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		99		101		70-130	%	06.06.19 06:12
4-Bromofluorobenzene	83		98		104		70-130	%	06.06.19 06:12

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091385

Parent Sample Id: 626508-006

Matrix: Soil

MS Sample Id: 626508-006 S

Prep Method: SW5030B

Date Prep: 06.05.19

MSD Sample Id: 626508-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000460	0.0998	0.117	117	0.120	118	70-130	3	35	mg/kg	06.06.19 06:50	
Toluene	<0.000455	0.0998	0.111	111	0.114	113	70-130	3	35	mg/kg	06.06.19 06:50	
Ethylbenzene	0.000960	0.0998	0.114	113	0.116	114	70-130	2	35	mg/kg	06.06.19 06:50	
m,p-Xylenes	0.00103	0.200	0.236	117	0.242	120	70-130	3	35	mg/kg	06.06.19 06:50	
o-Xylene	0.000860	0.0998	0.118	117	0.120	118	70-130	2	35	mg/kg	06.06.19 06:50	

Surrogate

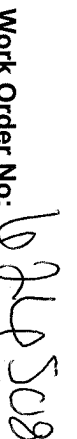
	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		103		70-130	%	06.06.19 06:50
4-Bromofluorobenzene	106		108		70-130	%	06.06.19 06:50

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

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

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



www.xenco.com Page 1 of 1

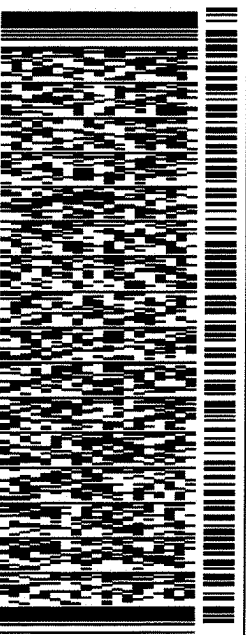
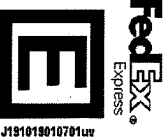
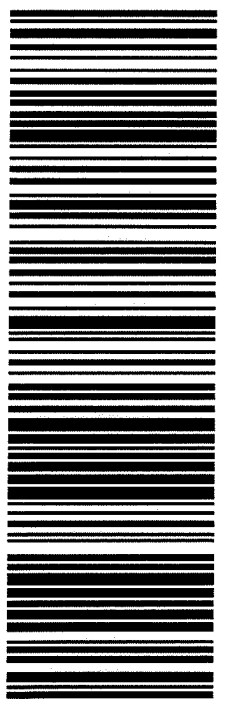
Work Order Notes

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

1631 / 245.1 / 7470 / 7471 : Hg

10

Date/Time
06/04/2016 11:10
06/05/19
12-22

ORIGIN ID: CACA (281) 240-4200 SAMPLE CUSTODY XENCO LABORATORIES NM 1089 N CANAL ST CARLSBAD, NM 88220 UNITED STATES US	SHIP DATE: 04JUN19 ACTWGT: 57.00 LB CAD: 11448676/NET4100 DIMS: 13x9x9 IN BILL SENDER
TO SAMPLE RECEIVING	
3600 S COUNTY ROAD 1276 MIDLAND TX 79706 REF: (432) 704-5440 INV: PO: DEPT:	
 	
TRK# 7753 8676 8923 0201	WED - 05 JUN HOLD PRIORITY OVERNIGHT HLD 79706 TX-US LBB
	

565J1/D210/23AD

After printing this label:

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

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

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/05/2019 12:23:00 PM

Work Order #: 626508

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?	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)?	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

Brianna Teel

Date: 06/05/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/05/2019

Analytical Report 626509

for
LT Environmental, Inc.

Project Manager: Dan Moir

JRU 138 @ JRU 19

012918148

06-JUN-19

Collected By: Client



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

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



06-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **626509**

JRU 138 @ JRU 19

Project Address: Delaware Basin

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) 626509. 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. 626509 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

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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Sample Cross Reference 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS22	S	06-03-19 10:45	15 ft	626509-001
FS23	S	06-03-19 12:30	15 ft	626509-002
FS24	S	06-03-19 13:45	15 ft	626509-003
FS25	S	06-03-19 13:50	15 ft	626509-004
SW20	S	06-03-19 10:50	0 - 15 ft	626509-005
SW21	S	06-03-19 10:55	0 - 15 ft	626509-006
SW22	S	06-03-19 11:05	0 - 15 ft	626509-007
SW23	S	06-03-19 11:15	0 - 15 ft	626509-008
SW24	S	06-03-19 11:20	4 - 15 ft	626509-009
SW25	S	06-03-19 12:35	0 - 15 ft	626509-010
SW26	S	06-03-19 12:45	0 - 15 ft	626509-011
SW27	S	06-03-19 12:55	0 - 15 ft	626509-012
SW28	S	06-03-19 13:00	0 - 15 ft	626509-013
SW29	S	06-03-19 13:55	0 - 15 ft	626509-014
SW30	S	06-03-19 14:05	0 - 15 ft	626509-015
SW31	S	06-03-19 14:10	0 - 15 ft	626509-016
SW32	S	06-03-19 14:20	0 - 15 ft	626509-017



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 138 @ JRU 19

Project ID: 012918148
Work Order Number(s): 626509

Report Date: 06-JUN-19
Date Received: 06/05/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3091338 Chloride by EPA 300

Lab Sample ID 626509-011 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: 626509-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017.

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

Batch: LBA-3091385 BTEX by EPA 8021B

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: 626509-009, 626509-007.

Batch: LBA-3091397 BTEX by EPA 8021B

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: 626509-013, 626509-017, 626509-015, 626509-014.

Lab Sample ID 626509-012 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 626509-011, -012, -013, -014, -015, -016, -017.

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



Certificate of Analysis Summary 626509

LT Environmental, Inc., Arvada, CO

Project Name: JRU 138 @ JRU 19



Project Id: 012918148
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Wed Jun-05-19 12:23 pm
Report Date: 06-JUN-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	626509-001	626509-002	626509-003	626509-004	626509-005	626509-006
	<i>Field Id:</i>	FS22	FS23	FS24	FS25	SW20	SW21
	<i>Depth:</i>	15- ft	15- ft	15- ft	15- ft	0-15 ft	0-15 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-03-19 10:45	Jun-03-19 12:30	Jun-03-19 13:45	Jun-03-19 13:50	Jun-03-19 10:50	Jun-03-19 10:55
BTEX by EPA 8021B	<i>Extracted:</i>	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00
	<i>Analyzed:</i>	Jun-06-19 12:10	Jun-06-19 12:29	Jun-06-19 12:49	Jun-06-19 13:09	Jun-06-19 13:29	Jun-06-19 13:50
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00199 0.00199
Toluene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	0.00433 0.00199
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00199 0.00199
m,p-Xylenes		<0.00402 0.00402	<0.00399 0.00399	<0.00401 0.00401	<0.00402 0.00402	<0.00397 0.00397	0.00571 0.00398
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	0.00383 0.00198	0.00351 0.00199
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	0.00383 0.00198	0.00922 0.00199
Total BTEX		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	0.00383 0.00198	0.0136 0.00199
Chloride by EPA 300	<i>Extracted:</i>	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00
	<i>Analyzed:</i>	Jun-05-19 19:33	Jun-05-19 19:17	Jun-05-19 19:38	Jun-05-19 19:43	Jun-05-19 19:49	Jun-06-19 08:31
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1350 5.04	50.9 5.00	394 5.03	1190 4.98	1040 5.00	569 5.00
TPH by SW8015 Mod	<i>Extracted:</i>	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00
	<i>Analyzed:</i>	Jun-05-19 17:15	Jun-05-19 18:15	Jun-05-19 18:35	Jun-05-19 18:55	Jun-05-19 19:15	Jun-05-19 19:35
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	23.9 15.0
Diesel Range Organics (DRO)		15.4 15.0	<15.0 15.0	<15.0 15.0	16.2 15.0	104 15.0	248 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	15.7 15.0	30.4 15.0
Total TPH		15.4 15.0	<15.0 15.0	<15.0 15.0	16.2 15.0	120 15.0	302 15.0
Total GRO-DRO		15.4 15.0	<15.0 15.0	<15.0 15.0	16.2 15.0	104 15.0	272 15.0

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

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 626509

LT Environmental, Inc., Arvada, CO

Project Name: JRU 138 @ JRU 19



Project Id: 012918148
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Wed Jun-05-19 12:23 pm
Report Date: 06-JUN-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626509-007	626509-008	626509-009	626509-010	626509-011	626509-012
	Field Id:	SW22	SW23	SW24	SW25	SW26	SW27
	Depth:	0-15 ft	0-15 ft	4-15 ft	0-15 ft	0-15 ft	0-15 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jun-03-19 11:05	Jun-03-19 11:15	Jun-03-19 11:20	Jun-03-19 12:35	Jun-03-19 12:45	Jun-03-19 12:55
BTEX by EPA 8021B	Extracted:	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-06-19 08:00	Jun-06-19 08:00
	Analyzed:	Jun-06-19 14:31	Jun-06-19 15:12	Jun-06-19 14:51	Jun-06-19 14:10	Jun-06-19 11:09	Jun-06-19 11:28
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.200 0.200	0.102 0.101	<0.199 0.199	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202
Toluene		1.14 0.200	<0.101 0.101	0.387 0.199	<0.00200 0.00200	0.00466 0.00200	<0.00202 0.00202
Ethylbenzene		2.02 0.200	<0.101 0.101	1.28 0.199	<0.00200 0.00200	0.00784 0.00200	<0.00202 0.00202
m,p-Xylenes		2.82 0.399	0.290 0.202	6.76 0.398	<0.00401 0.00401	0.0658 0.00400	0.00412 0.00403
o-Xylene		0.620 0.200	0.187 0.101	1.97 0.199	<0.00200 0.00200	0.0266 0.00200	<0.00202 0.00202
Total Xylenes		3.44 0.200	0.477 0.101	8.73 0.199	<0.00200 0.00200	0.0924 0.00200	0.00412 0.00202
Total BTEX		6.60 0.200	0.579 0.101	10.4 0.199	<0.00200 0.00200	0.105 0.00200	0.00412 0.00202
Chloride by EPA 300	Extracted:	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00
	Analyzed:	Jun-06-19 08:36	Jun-06-19 08:41	Jun-05-19 20:20	Jun-05-19 20:25	Jun-05-19 20:31	Jun-05-19 20:46
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1430 5.00	1180 5.00	1990 25.1	440 4.98	807 5.05	806 5.00
TPH by SW8015 Mod	Extracted:	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00
	Analyzed:	Jun-05-19 19:55	Jun-05-19 20:14	Jun-05-19 20:34	Jun-05-19 20:53	Jun-05-19 21:32	Jun-05-19 21:51
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		547 15.0	69.7 15.0	954 15.0	<14.9 14.9	56.0 15.0	35.7 15.0
Diesel Range Organics (DRO)		3810 15.0	1490 15.0	3470 15.0	<14.9 14.9	459 15.0	1230 15.0
Motor Oil Range Hydrocarbons (MRO)		455 15.0	226 15.0	358 15.0	<14.9 14.9	47.8 15.0	203 15.0
Total TPH		4810 15.0	1790 15.0	4780 15.0	<14.9 14.9	563 15.0	1470 15.0
Total GRO-DRO		4360 15.0	1560 15.0	4420 15.0	<14.9 14.9	515 15.0	1270 15.0

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

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Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 626509

LT Environmental, Inc., Arvada, CO

Project Name: JRU 138 @ JRU 19



Project Id: 012918148
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Wed Jun-05-19 12:23 pm
Report Date: 06-JUN-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626509-013	626509-014	626509-015	626509-016	626509-017	
	Field Id:	SW28	SW29	SW30	SW31	SW32	
	Depth:	0-15 ft	0-15 ft	0-15 ft	0-15 ft	0-15 ft	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Jun-03-19 13:00	Jun-03-19 13:55	Jun-03-19 14:05	Jun-03-19 14:10	Jun-03-19 14:20	
BTEX by EPA 8021B	Extracted:	Jun-06-19 08:00	Jun-06-19 08:00	Jun-06-19 08:00	Jun-06-19 08:00	Jun-06-19 08:00	
	Analyzed:	Jun-06-19 11:47	Jun-06-19 12:06	Jun-06-19 12:25	Jun-06-19 12:44	Jun-06-19 13:03	
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
		RL	RL	RL	RL	RL	
Benzene		<0.00200 0.00200	0.00253 0.00200	0.00320 0.00200	<0.00198 0.00198	<0.00199 0.00199	
Toluene		0.0250 0.00200	0.0352 0.00200	0.0370 0.00200	0.00460 0.00198	<0.00199 0.00199	
Ethylbenzene		0.0310 0.00200	0.0421 0.00200	0.0464 0.00200	0.0113 0.00198	0.0206 0.00199	
m,p-Xylenes		0.201 0.00399	0.268 0.00401	0.286 0.00400	0.0343 0.00397	0.0916 0.00398	
o-Xylene		0.0754 0.00200	0.136 0.00200	0.143 0.00200	0.0274 0.00198	0.0211 0.00199	
Total Xylenes		0.276 0.00200	0.404 0.00200	0.429 0.00200	0.0617 0.00198	0.113 0.00199	
Total BTEX		0.332 0.00200	0.484 0.00200	0.516 0.00200	0.0776 0.00198	0.133 0.00199	
Chloride by EPA 300	Extracted:	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	
	Analyzed:	Jun-05-19 20:52	Jun-05-19 20:57	Jun-06-19 10:37	Jun-05-19 21:07	Jun-05-19 21:23	
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
		RL	RL	RL	RL	RL	
Chloride		1380 4.95	1920 24.9	1640 25.2	397 4.97	1660 25.0	
TPH by SW8015 Mod	Extracted:	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00	
	Analyzed:	Jun-05-19 22:11	Jun-05-19 22:30	Jun-05-19 22:49	Jun-05-19 23:09	Jun-05-19 23:28	
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
		RL	RL	RL	RL	RL	
Gasoline Range Hydrocarbons (GRO)		214 15.0	356 15.0	406 15.0	59.6 15.0	188 15.0	
Diesel Range Organics (DRO)		1290 15.0	1760 15.0	1650 15.0	1160 15.0	1330 15.0	
Motor Oil Range Hydrocarbons (MRO)		170 15.0	196 15.0	158 15.0	153 15.0	146 15.0	
Total TPH		1670 15.0	2310 15.0	2210 15.0	1370 15.0	1660 15.0	
Total GRO-DRO		1500 15.0	2120 15.0	2060 15.0	1220 15.0	1520 15.0	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.
The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.
XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.
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Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: FS22
Lab Sample Id: 626509-001

Matrix: Soil
Date Collected: 06.03.19 10.45

Date Received: 06.05.19 12.23
Sample Depth: 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091338

Date Prep: 06.05.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1350	5.04	mg/kg	06.05.19 19.33		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091358

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.05.19 17.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	15.4	15.0	mg/kg	06.05.19 17.15		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.05.19 17.15	U	1
Total TPH	PHC635	15.4	15.0	mg/kg	06.05.19 17.15		1
Total GRO-DRO	PHC628	15.4	15.0	mg/kg	06.05.19 17.15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.05.19 17.15	
o-Terphenyl	84-15-1	99	%	70-135	06.05.19 17.15	



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: FS22
Lab Sample Id: 626509-001

Matrix: Soil
Date Collected: 06.03.19 10.45

Date Received: 06.05.19 12.23
Sample Depth: 15 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.05.19 16.00

Basis: Wet Weight

Seq Number: 3091385

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.06.19 12.10	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.06.19 12.10	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.06.19 12.10	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.06.19 12.10	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.06.19 12.10	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.06.19 12.10	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.06.19 12.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.06.19 12.10		
4-Bromofluorobenzene	460-00-4	102	%	70-130	06.06.19 12.10		



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: FS23
Lab Sample Id: 626509-002

Matrix: Soil
Date Collected: 06.03.19 12.30

Date Received: 06.05.19 12.23
Sample Depth: 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091338

Date Prep: 06.05.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	50.9	5.00	mg/kg	06.05.19 19.17		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091358

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.05.19 18.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.05.19 18.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.05.19 18.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.05.19 18.15	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.05.19 18.15	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	104	%	70-135	06.05.19 18.15	
84-15-1	104	%	70-135	06.05.19 18.15	



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS23**
Lab Sample Id: 626509-002

Matrix: Soil
Date Collected: 06.03.19 12.30

Date Received: 06.05.19 12.23
Sample Depth: 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091385

Date Prep: 06.05.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.06.19 12.29	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.06.19 12.29	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.06.19 12.29	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.06.19 12.29	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.06.19 12.29	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.06.19 12.29	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.06.19 12.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.06.19 12.29		
4-Bromofluorobenzene	460-00-4	95	%	70-130	06.06.19 12.29		



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS24**
Lab Sample Id: 626509-003

Matrix: Soil
Date Collected: 06.03.19 13.45

Date Received: 06.05.19 12.23
Sample Depth: 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091338

Date Prep: 06.05.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	394	5.03	mg/kg	06.05.19 19.38		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091358

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.05.19 18.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.05.19 18.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.05.19 18.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.05.19 18.35	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.05.19 18.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	06.05.19 18.35	
o-Terphenyl	84-15-1	101	%	70-135	06.05.19 18.35	



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS24**
Lab Sample Id: 626509-003

Matrix: Soil
Date Collected: 06.03.19 13.45

Date Received: 06.05.19 12.23
Sample Depth: 15 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.05.19 16.00

Basis: Wet Weight

Seq Number: 3091385

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.06.19 12.49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.06.19 12.49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.06.19 12.49	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.06.19 12.49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.06.19 12.49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.06.19 12.49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.06.19 12.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.06.19 12.49		
4-Bromofluorobenzene	460-00-4	108	%	70-130	06.06.19 12.49		



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: FS25
Lab Sample Id: 626509-004

Matrix: Soil
Date Collected: 06.03.19 13.50

Date Received: 06.05.19 12.23
Sample Depth: 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091338

Date Prep: 06.05.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1190	4.98	mg/kg	06.05.19 19.43		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091358

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.05.19 18.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	16.2	15.0	mg/kg	06.05.19 18.55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.05.19 18.55	U	1
Total TPH	PHC635	16.2	15.0	mg/kg	06.05.19 18.55		1
Total GRO-DRO	PHC628	16.2	15.0	mg/kg	06.05.19 18.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	06.05.19 18.55	
o-Terphenyl	84-15-1	97	%	70-135	06.05.19 18.55	



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS25**
Lab Sample Id: 626509-004

Matrix: Soil
Date Collected: 06.03.19 13.50

Date Received: 06.05.19 12.23
Sample Depth: 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091385

Date Prep: 06.05.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.06.19 13.09	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.06.19 13.09	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.06.19 13.09	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.06.19 13.09	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.06.19 13.09	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.06.19 13.09	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.06.19 13.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	06.06.19 13.09		
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.06.19 13.09		



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW20**
Lab Sample Id: 626509-005

Matrix: Soil
Date Collected: 06.03.19 10.50

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091338

Date Prep: 06.05.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1040	5.00	mg/kg	06.05.19 19.49		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091358

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.05.19 19.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	104	15.0	mg/kg	06.05.19 19.15		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	15.7	15.0	mg/kg	06.05.19 19.15		1
Total TPH	PHC635	120	15.0	mg/kg	06.05.19 19.15		1
Total GRO-DRO	PHC628	104	15.0	mg/kg	06.05.19 19.15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	06.05.19 19.15	
o-Terphenyl	84-15-1	103	%	70-135	06.05.19 19.15	



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW20**
Lab Sample Id: 626509-005

Matrix: Soil
Date Collected: 06.03.19 10.50

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091385

Date Prep: 06.05.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.06.19 13.29	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.06.19 13.29	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.06.19 13.29	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.06.19 13.29	U	1
o-Xylene	95-47-6	0.00383	0.00198	mg/kg	06.06.19 13.29		1
Total Xylenes	1330-20-7	0.00383	0.00198	mg/kg	06.06.19 13.29		1
Total BTEX		0.00383	0.00198	mg/kg	06.06.19 13.29		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	70-130	06.06.19 13.29		
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.06.19 13.29		



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW21**
Lab Sample Id: 626509-006

Matrix: Soil
Date Collected: 06.03.19 10.55

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091338

Date Prep: 06.05.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	569	5.00	mg/kg	06.06.19 08.31		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091358

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	23.9	15.0	mg/kg	06.05.19 19.35		1
Diesel Range Organics (DRO)	C10C28DRO	248	15.0	mg/kg	06.05.19 19.35		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	30.4	15.0	mg/kg	06.05.19 19.35		1
Total TPH	PHC635	302	15.0	mg/kg	06.05.19 19.35		1
Total GRO-DRO	PHC628	272	15.0	mg/kg	06.05.19 19.35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.05.19 19.35	
o-Terphenyl	84-15-1	107	%	70-135	06.05.19 19.35	



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW21**
Lab Sample Id: 626509-006

Matrix: Soil
Date Collected: 06.03.19 10.55

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091385

Date Prep: 06.05.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.06.19 13.50	U	1
Toluene	108-88-3	0.00433	0.00199	mg/kg	06.06.19 13.50		1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.06.19 13.50	U	1
m,p-Xylenes	179601-23-1	0.00571	0.00398	mg/kg	06.06.19 13.50		1
o-Xylene	95-47-6	0.00351	0.00199	mg/kg	06.06.19 13.50		1
Total Xylenes	1330-20-7	0.00922	0.00199	mg/kg	06.06.19 13.50		1
Total BTEX		0.0136	0.00199	mg/kg	06.06.19 13.50		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	120	%	70-130	06.06.19 13.50		
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.06.19 13.50		



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW22**
Lab Sample Id: 626509-007

Matrix: Soil
Date Collected: 06.03.19 11.05

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091338

Date Prep: 06.05.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1430	5.00	mg/kg	06.06.19 08.36		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091358

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	547	15.0	mg/kg	06.05.19 19.55		1
Diesel Range Organics (DRO)	C10C28DRO	3810	15.0	mg/kg	06.05.19 19.55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	455	15.0	mg/kg	06.05.19 19.55		1
Total TPH	PHC635	4810	15.0	mg/kg	06.05.19 19.55		1
Total GRO-DRO	PHC628	4360	15.0	mg/kg	06.05.19 19.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	06.05.19 19.55	
o-Terphenyl	84-15-1	101	%	70-135	06.05.19 19.55	



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW22**
Lab Sample Id: 626509-007

Matrix: Soil
Date Collected: 06.03.19 11.05

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091385

Prep Method: SW5030B

% Moisture:

Date Prep: 06.05.19 16.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.200	0.200	mg/kg	06.06.19 14.31	U	100
Toluene	108-88-3	1.14	0.200	mg/kg	06.06.19 14.31		100
Ethylbenzene	100-41-4	2.02	0.200	mg/kg	06.06.19 14.31		100
m,p-Xylenes	179601-23-1	2.82	0.399	mg/kg	06.06.19 14.31		100
o-Xylene	95-47-6	0.620	0.200	mg/kg	06.06.19 14.31		100
Total Xylenes	1330-20-7	3.44	0.200	mg/kg	06.06.19 14.31		100
Total BTEX		6.60	0.200	mg/kg	06.06.19 14.31		100
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	135	%	70-130	06.06.19 14.31	**	
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.06.19 14.31		



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW23**
Lab Sample Id: 626509-008

Matrix: Soil
Date Collected: 06.03.19 11.15

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091338

Date Prep: 06.05.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1180	5.00	mg/kg	06.06.19 08.41		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091358

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	69.7	15.0	mg/kg	06.05.19 20.14		1
Diesel Range Organics (DRO)	C10C28DRO	1490	15.0	mg/kg	06.05.19 20.14		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	226	15.0	mg/kg	06.05.19 20.14		1
Total TPH	PHC635	1790	15.0	mg/kg	06.05.19 20.14		1
Total GRO-DRO	PHC628	1560	15.0	mg/kg	06.05.19 20.14		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	06.05.19 20.14	
o-Terphenyl	84-15-1	116	%	70-135	06.05.19 20.14	



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW23**
Lab Sample Id: 626509-008

Matrix: Soil
Date Collected: 06.03.19 11.15

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091385

Date Prep: 06.05.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.102	0.101	mg/kg	06.06.19 15.12		50
Toluene	108-88-3	<0.101	0.101	mg/kg	06.06.19 15.12	U	50
Ethylbenzene	100-41-4	<0.101	0.101	mg/kg	06.06.19 15.12	U	50
m,p-Xylenes	179601-23-1	0.290	0.202	mg/kg	06.06.19 15.12		50
o-Xylene	95-47-6	0.187	0.101	mg/kg	06.06.19 15.12		50
Total Xylenes	1330-20-7	0.477	0.101	mg/kg	06.06.19 15.12		50
Total BTEX		0.579	0.101	mg/kg	06.06.19 15.12		50
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.06.19 15.12		
4-Bromofluorobenzene	460-00-4	113	%	70-130	06.06.19 15.12		



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW24**
Lab Sample Id: 626509-009

Matrix: Soil
Date Collected: 06.03.19 11.20

Date Received: 06.05.19 12.23
Sample Depth: 4 - 15 ft

Analytical Method: Chloride by EPA 300
Tech: CHE
Analyst: CHE
Seq Number: 3091338

Date Prep: 06.05.19 16.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1990	25.1	mg/kg	06.05.19 20.20		5

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3091358

Date Prep: 06.05.19 14.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	954	15.0	mg/kg	06.05.19 20.34		1
Diesel Range Organics (DRO)	C10C28DRO	3470	15.0	mg/kg	06.05.19 20.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	358	15.0	mg/kg	06.05.19 20.34		1
Total TPH	PHC635	4780	15.0	mg/kg	06.05.19 20.34		1
Total GRO-DRO	PHC628	4420	15.0	mg/kg	06.05.19 20.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	129	%	70-135	06.05.19 20.34	
o-Terphenyl	84-15-1	111	%	70-135	06.05.19 20.34	



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW24**
Lab Sample Id: 626509-009

Matrix: Soil
Date Collected: 06.03.19 11.20

Date Received: 06.05.19 12.23
Sample Depth: 4 - 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091385

Date Prep: 06.05.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.199	0.199	mg/kg	06.06.19 14.51	U	100
Toluene	108-88-3	0.387	0.199	mg/kg	06.06.19 14.51		100
Ethylbenzene	100-41-4	1.28	0.199	mg/kg	06.06.19 14.51		100
m,p-Xylenes	179601-23-1	6.76	0.398	mg/kg	06.06.19 14.51		100
o-Xylene	95-47-6	1.97	0.199	mg/kg	06.06.19 14.51		100
Total Xylenes	1330-20-7	8.73	0.199	mg/kg	06.06.19 14.51		100
Total BTEX		10.4	0.199	mg/kg	06.06.19 14.51		100
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	136	%	70-130	06.06.19 14.51	**	
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.06.19 14.51		



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LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW25**
Lab Sample Id: 626509-010

Matrix: Soil
Date Collected: 06.03.19 12.35

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091338

Date Prep: 06.05.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	440	4.98	mg/kg	06.05.19 20.25		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091358

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.05.19 20.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.05.19 20.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.05.19 20.53	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.05.19 20.53	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.05.19 20.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	06.05.19 20.53	
o-Terphenyl	84-15-1	103	%	70-135	06.05.19 20.53	



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LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW25**
Lab Sample Id: 626509-010

Matrix: Soil
Date Collected: 06.03.19 12.35

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091385

Prep Method: SW5030B

% Moisture:

Date Prep: 06.05.19 16.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.06.19 14.10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.06.19 14.10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.06.19 14.10	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.06.19 14.10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.06.19 14.10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.06.19 14.10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.06.19 14.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	06.06.19 14.10		
4-Bromofluorobenzene	460-00-4	105	%	70-130	06.06.19 14.10		



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LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW26**
Lab Sample Id: 626509-011

Matrix: Soil
Date Collected: 06.03.19 12.45

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091338

Date Prep: 06.05.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	807	5.05	mg/kg	06.05.19 20.31		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091358

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	56.0	15.0	mg/kg	06.05.19 21.32		1
Diesel Range Organics (DRO)	C10C28DRO	459	15.0	mg/kg	06.05.19 21.32		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	47.8	15.0	mg/kg	06.05.19 21.32		1
Total TPH	PHC635	563	15.0	mg/kg	06.05.19 21.32		1
Total GRO-DRO	PHC628	515	15.0	mg/kg	06.05.19 21.32		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	06.05.19 21.32	
o-Terphenyl	84-15-1	114	%	70-135	06.05.19 21.32	



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LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW26**
Lab Sample Id: 626509-011

Matrix: Soil
Date Collected: 06.03.19 12.45

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091397

Date Prep: 06.06.19 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.06.19 11.09	U	1
Toluene	108-88-3	0.00466	0.00200	mg/kg	06.06.19 11.09		1
Ethylbenzene	100-41-4	0.00784	0.00200	mg/kg	06.06.19 11.09		1
m,p-Xylenes	179601-23-1	0.0658	0.00400	mg/kg	06.06.19 11.09		1
o-Xylene	95-47-6	0.0266	0.00200	mg/kg	06.06.19 11.09		1
Total Xylenes	1330-20-7	0.0924	0.00200	mg/kg	06.06.19 11.09		1
Total BTEX		0.105	0.00200	mg/kg	06.06.19 11.09		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	06.06.19 11.09		
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.06.19 11.09		



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LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW27**
Lab Sample Id: 626509-012

Matrix: Soil
Date Collected: 06.03.19 12.55

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091338

Date Prep: 06.05.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	806	5.00	mg/kg	06.05.19 20.46		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091358

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	35.7	15.0	mg/kg	06.05.19 21.51		1
Diesel Range Organics (DRO)	C10C28DRO	1230	15.0	mg/kg	06.05.19 21.51		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	203	15.0	mg/kg	06.05.19 21.51		1
Total TPH	PHC635	1470	15.0	mg/kg	06.05.19 21.51		1
Total GRO-DRO	PHC628	1270	15.0	mg/kg	06.05.19 21.51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	06.05.19 21.51	
o-Terphenyl	84-15-1	113	%	70-135	06.05.19 21.51	



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LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW27**
Lab Sample Id: 626509-012

Matrix: Soil
Date Collected: 06.03.19 12.55

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091397

Date Prep: 06.06.19 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.06.19 11.28	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.06.19 11.28	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.06.19 11.28	U	1
m,p-Xylenes	179601-23-1	0.00412	0.00403	mg/kg	06.06.19 11.28		1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.06.19 11.28	U	1
Total Xylenes	1330-20-7	0.00412	0.00202	mg/kg	06.06.19 11.28		1
Total BTEX		0.00412	0.00202	mg/kg	06.06.19 11.28		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.06.19 11.28		
4-Bromofluorobenzene	460-00-4	108	%	70-130	06.06.19 11.28		



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LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW28**
Lab Sample Id: 626509-013

Matrix: Soil
Date Collected: 06.03.19 13.00

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091338

Date Prep: 06.05.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1380	4.95	mg/kg	06.05.19 20.52		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091358

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	214	15.0	mg/kg	06.05.19 22.11		1
Diesel Range Organics (DRO)	C10C28DRO	1290	15.0	mg/kg	06.05.19 22.11		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	170	15.0	mg/kg	06.05.19 22.11		1
Total TPH	PHC635	1670	15.0	mg/kg	06.05.19 22.11		1
Total GRO-DRO	PHC628	1500	15.0	mg/kg	06.05.19 22.11		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	06.05.19 22.11	
o-Terphenyl	84-15-1	123	%	70-135	06.05.19 22.11	



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW28**
Lab Sample Id: 626509-013

Matrix: Soil
Date Collected: 06.03.19 13.00

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091397

Date Prep: 06.06.19 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.06.19 11.47	U	1
Toluene	108-88-3	0.0250	0.00200	mg/kg	06.06.19 11.47		1
Ethylbenzene	100-41-4	0.0310	0.00200	mg/kg	06.06.19 11.47		1
m,p-Xylenes	179601-23-1	0.201	0.00399	mg/kg	06.06.19 11.47		1
o-Xylene	95-47-6	0.0754	0.00200	mg/kg	06.06.19 11.47		1
Total Xylenes	1330-20-7	0.276	0.00200	mg/kg	06.06.19 11.47		1
Total BTEX		0.332	0.00200	mg/kg	06.06.19 11.47		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	179	%	70-130	06.06.19 11.47	**	
1,4-Difluorobenzene	540-36-3	110	%	70-130	06.06.19 11.47		



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LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW29**
Lab Sample Id: 626509-014

Matrix: Soil
Date Collected: 06.03.19 13.55

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091338

Date Prep: 06.05.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1920	24.9	mg/kg	06.05.19 20.57		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091358

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	356	15.0	mg/kg	06.05.19 22.30		1
Diesel Range Organics (DRO)	C10C28DRO	1760	15.0	mg/kg	06.05.19 22.30		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	196	15.0	mg/kg	06.05.19 22.30		1
Total TPH	PHC635	2310	15.0	mg/kg	06.05.19 22.30		1
Total GRO-DRO	PHC628	2120	15.0	mg/kg	06.05.19 22.30		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	06.05.19 22.30	
o-Terphenyl	84-15-1	125	%	70-135	06.05.19 22.30	



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LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW29**
Lab Sample Id: 626509-014

Matrix: Soil
Date Collected: 06.03.19 13.55

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091397

Date Prep: 06.06.19 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00253	0.00200	mg/kg	06.06.19 12.06		1
Toluene	108-88-3	0.0352	0.00200	mg/kg	06.06.19 12.06		1
Ethylbenzene	100-41-4	0.0421	0.00200	mg/kg	06.06.19 12.06		1
m,p-Xylenes	179601-23-1	0.268	0.00401	mg/kg	06.06.19 12.06		1
o-Xylene	95-47-6	0.136	0.00200	mg/kg	06.06.19 12.06		1
Total Xylenes	1330-20-7	0.404	0.00200	mg/kg	06.06.19 12.06		1
Total BTEX		0.484	0.00200	mg/kg	06.06.19 12.06		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	196	%	70-130	06.06.19 12.06	**	
1,4-Difluorobenzene	540-36-3	118	%	70-130	06.06.19 12.06		



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW30**
Lab Sample Id: 626509-015

Matrix: Soil
Date Collected: 06.03.19 14.05

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091338

Date Prep: 06.05.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1640	25.2	mg/kg	06.06.19 10.37		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091358

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	406	15.0	mg/kg	06.05.19 22.49		1
Diesel Range Organics (DRO)	C10C28DRO	1650	15.0	mg/kg	06.05.19 22.49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	158	15.0	mg/kg	06.05.19 22.49		1
Total TPH	PHC635	2210	15.0	mg/kg	06.05.19 22.49		1
Total GRO-DRO	PHC628	2060	15.0	mg/kg	06.05.19 22.49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	06.05.19 22.49	
o-Terphenyl	84-15-1	129	%	70-135	06.05.19 22.49	



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW30**
Lab Sample Id: 626509-015

Matrix: Soil
Date Collected: 06.03.19 14.05

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091397

Date Prep: 06.06.19 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00320	0.00200	mg/kg	06.06.19 12.25		1
Toluene	108-88-3	0.0370	0.00200	mg/kg	06.06.19 12.25		1
Ethylbenzene	100-41-4	0.0464	0.00200	mg/kg	06.06.19 12.25		1
m,p-Xylenes	179601-23-1	0.286	0.00400	mg/kg	06.06.19 12.25		1
o-Xylene	95-47-6	0.143	0.00200	mg/kg	06.06.19 12.25		1
Total Xylenes	1330-20-7	0.429	0.00200	mg/kg	06.06.19 12.25		1
Total BTEX		0.516	0.00200	mg/kg	06.06.19 12.25		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	122	%	70-130	06.06.19 12.25		
4-Bromofluorobenzene	460-00-4	204	%	70-130	06.06.19 12.25	**	



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW31**
Lab Sample Id: 626509-016

Matrix: Soil
Date Collected: 06.03.19 14.10

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091338

Date Prep: 06.05.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	397	4.97	mg/kg	06.05.19 21.07		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091358

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	59.6	15.0	mg/kg	06.05.19 23.09		1
Diesel Range Organics (DRO)	C10C28DRO	1160	15.0	mg/kg	06.05.19 23.09		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	153	15.0	mg/kg	06.05.19 23.09		1
Total TPH	PHC635	1370	15.0	mg/kg	06.05.19 23.09		1
Total GRO-DRO	PHC628	1220	15.0	mg/kg	06.05.19 23.09		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	06.05.19 23.09	
o-Terphenyl	84-15-1	118	%	70-135	06.05.19 23.09	



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW31**
Lab Sample Id: 626509-016

Matrix: Soil
Date Collected: 06.03.19 14.10

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091397

Date Prep: 06.06.19 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.06.19 12.44	U	1
Toluene	108-88-3	0.00460	0.00198	mg/kg	06.06.19 12.44		1
Ethylbenzene	100-41-4	0.0113	0.00198	mg/kg	06.06.19 12.44		1
m,p-Xylenes	179601-23-1	0.0343	0.00397	mg/kg	06.06.19 12.44		1
o-Xylene	95-47-6	0.0274	0.00198	mg/kg	06.06.19 12.44		1
Total Xylenes	1330-20-7	0.0617	0.00198	mg/kg	06.06.19 12.44		1
Total BTEX		0.0776	0.00198	mg/kg	06.06.19 12.44		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.06.19 12.44		
4-Bromofluorobenzene	460-00-4	120	%	70-130	06.06.19 12.44		



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW32**
Lab Sample Id: 626509-017

Matrix: Soil
Date Collected: 06.03.19 14.20

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091338

Date Prep: 06.05.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1660	25.0	mg/kg	06.05.19 21.23		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091358

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	188	15.0	mg/kg	06.05.19 23.28		1
Diesel Range Organics (DRO)	C10C28DRO	1330	15.0	mg/kg	06.05.19 23.28		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	146	15.0	mg/kg	06.05.19 23.28		1
Total TPH	PHC635	1660	15.0	mg/kg	06.05.19 23.28		1
Total GRO-DRO	PHC628	1520	15.0	mg/kg	06.05.19 23.28		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	06.05.19 23.28	
o-Terphenyl	84-15-1	124	%	70-135	06.05.19 23.28	



Certificate of Analytical Results 626509



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW32**
Lab Sample Id: 626509-017

Matrix: Soil
Date Collected: 06.03.19 14.20

Date Received: 06.05.19 12.23
Sample Depth: 0 - 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091397

Date Prep: 06.06.19 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.06.19 13.03	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.06.19 13.03	U	1
Ethylbenzene	100-41-4	0.0206	0.00199	mg/kg	06.06.19 13.03		1
m,p-Xylenes	179601-23-1	0.0916	0.00398	mg/kg	06.06.19 13.03		1
o-Xylene	95-47-6	0.0211	0.00199	mg/kg	06.06.19 13.03		1
Total Xylenes	1330-20-7	0.113	0.00199	mg/kg	06.06.19 13.03		1
Total BTEX		0.133	0.00199	mg/kg	06.06.19 13.03		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	113		%	70-130	06.06.19 13.03	
4-Bromofluorobenzene	460-00-4	153		%	70-130	06.06.19 13.03	**

- 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 626509

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: Chloride by EPA 300

Seq Number: 3091338

MB Sample Id: 7679324-1-BLK

Matrix: Solid

LCS Sample Id: 7679324-1-BKS

Prep Method: E300P

Date Prep: 06.05.19

LCSD Sample Id: 7679324-1-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	244	98	245	98	90-110	0	20	mg/kg	06.05.19 19:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3091338

Parent Sample Id: 626509-002

Matrix: Soil

MS Sample Id: 626509-002 S

Prep Method: E300P

Date Prep: 06.05.19

MSD Sample Id: 626509-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	50.9	250	315	106	313	105	90-110	1	20	mg/kg	06.05.19 19:22	

Analytical Method: Chloride by EPA 300

Seq Number: 3091338

Parent Sample Id: 626509-011

Matrix: Soil

MS Sample Id: 626509-011 S

Prep Method: E300P

Date Prep: 06.05.19

MSD Sample Id: 626509-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	807	253	1030	88	1020	84	90-110	1	20	mg/kg	06.05.19 20:36	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091338

MB Sample Id: 7679341-1-BLK

Matrix: Solid

LCS Sample Id: 7679341-1-BKS

Prep Method: TX1005P

Date Prep: 06.05.19

LCSD Sample Id: 7679341-1-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	1130	113	1110	111	70-135	2	20	mg/kg	06.05.19 16:35	
Diesel Range Organics (DRO)	<8.13	1000	1100	110	1090	109	70-135	1	20	mg/kg	06.05.19 16:35	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	96		121		120		70-135	%	06.05.19 16:35
o-Terphenyl	97		105		104		70-135	%	06.05.19 16:35

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 626509

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091358

Parent Sample Id: 626509-001

Matrix: Soil

MS Sample Id: 626509-001 S

Prep Method: TX1005P

Date Prep: 06.05.19

MSD Sample Id: 626509-001 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)	9.65	999	1150	114	1170	116	70-135	2	20	mg/kg	06.05.19 17:35	
Diesel Range Organics (DRO)	15.4	999	1140	113	1150	114	70-135	1	20	mg/kg	06.05.19 17:35	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		121		70-135	%	06.05.19 17:35
o-Terphenyl	106		111		70-135	%	06.05.19 17:35

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091385

MB Sample Id: 7679296-1-BLK

Matrix: Solid

LCS Sample Id: 7679296-1-BKS

Prep Method: SW5030B

Date Prep: 06.05.19

LCSD Sample Id: 7679296-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0994	0.108	109	0.114	114	70-130	5	35	mg/kg	06.06.19 06:12	
Toluene	<0.000453	0.0994	0.105	106	0.110	110	70-130	5	35	mg/kg	06.06.19 06:12	
Ethylbenzene	<0.000561	0.0994	0.114	115	0.118	118	70-130	3	35	mg/kg	06.06.19 06:12	
m,p-Xylenes	<0.00101	0.199	0.230	116	0.239	120	70-130	4	35	mg/kg	06.06.19 06:12	
o-Xylene	<0.000342	0.0994	0.113	114	0.119	119	70-130	5	35	mg/kg	06.06.19 06:12	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		99		101		70-130	%	06.06.19 06:12
4-Bromofluorobenzene	83		98		104		70-130	%	06.06.19 06:12

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091397

MB Sample Id: 7679357-1-BLK

Matrix: Solid

LCS Sample Id: 7679357-1-BKS

Prep Method: SW5030B

Date Prep: 06.06.19

LCSD Sample Id: 7679357-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0892	89	0.0913	92	70-130	2	35	mg/kg	06.06.19 09:17	
Toluene	<0.00200	0.0998	0.0938	94	0.0976	98	70-130	4	35	mg/kg	06.06.19 09:17	
Ethylbenzene	<0.00200	0.0998	0.0987	99	0.103	104	70-130	4	35	mg/kg	06.06.19 09:17	
m,p-Xylenes	<0.00399	0.200	0.203	102	0.212	107	70-130	4	35	mg/kg	06.06.19 09:17	
o-Xylene	<0.00200	0.0998	0.101	101	0.105	106	70-130	4	35	mg/kg	06.06.19 09:17	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		97		96		70-130	%	06.06.19 09:17
4-Bromofluorobenzene	101		101		102		70-130	%	06.06.19 09:17

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

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

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 626509

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091385

Parent Sample Id: 626508-006

Matrix: Soil

MS Sample Id: 626508-006 S

Prep Method: SW5030B

Date Prep: 06.05.19

MSD Sample Id: 626508-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000460	0.0998	0.117	117	0.120	118	70-130	3	35	mg/kg	06.06.19 06:50	
Toluene	<0.000455	0.0998	0.111	111	0.114	113	70-130	3	35	mg/kg	06.06.19 06:50	
Ethylbenzene	0.000960	0.0998	0.114	113	0.116	114	70-130	2	35	mg/kg	06.06.19 06:50	
m,p-Xylenes	0.00103	0.200	0.236	117	0.242	120	70-130	3	35	mg/kg	06.06.19 06:50	
o-Xylene	0.000860	0.0998	0.118	117	0.120	118	70-130	2	35	mg/kg	06.06.19 06:50	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		103		70-130	%	06.06.19 06:50
4-Bromofluorobenzene	106		108		70-130	%	06.06.19 06:50

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091397

Parent Sample Id: 626509-012

Matrix: Soil

MS Sample Id: 626509-012 S

Prep Method: SW5030B

Date Prep: 06.06.19

MSD Sample Id: 626509-012 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	0.0561	56	0.0620	62	70-130	10	35	mg/kg	06.06.19 09:55	X
Toluene	<0.000454	0.0996	0.0473	47	0.0537	54	70-130	13	35	mg/kg	06.06.19 09:55	X
Ethylbenzene	<0.00199	0.0996	0.0423	42	0.0448	45	70-130	6	35	mg/kg	06.06.19 09:55	X
m,p-Xylenes	0.00412	0.199	0.0874	42	0.0934	44	70-130	7	35	mg/kg	06.06.19 09:55	X
o-Xylene	0.00193	0.0996	0.0442	42	0.0475	46	70-130	7	35	mg/kg	06.06.19 09:55	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		99		70-130	%	06.06.19 09:55
4-Bromofluorobenzene	104		112		70-130	%	06.06.19 09:55

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

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

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

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



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

[illegible]

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Samples	TPH	BTE	Chloride	Sample Comments
FS22	S	4/3/19	1045	15'	1				
FS23	S		1230	15'	1				
FS24	S		1345	15'	1				
FS25	S		1350	15'	1				
SM20	S		1050	0-15'	1				
SM21	S		1055	0-15'	1				
SM22	S		1105	0-15'	1				
SM23	S		1115	0-15'	1				
SM24	S		1120	4-15'	1				
SM25	S		1235	0-15'	1				

Notice: Signature on this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>Ann Byers</i>	<i>[Signature]</i>	06/04/2019 11:40	2 <i>[Signature]</i>	<i>[Signature]</i>	06/04/2019 11:50
3			4	<i>[Signature]</i>	06/04/2019
5			6		



Chain of Custody

Work Order No. _____

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0380 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296
Phoenix, AZ (480-355-0900) Atlanta GA (770-449-8800) Tampa FL (813-444-4444)
Hobbs, NM (575-392-7550)

www.xenco.com

Page 2 of 2

Project Manager:	Dan Meir		Bill to: (if different)	Kyle Littrell
Company Name:	LT Equivon wanted line		Company Name:	XTD
Address:	4300 North A Street		Address:	3104 E. Greave Street
City, State ZIP:	Midland TX 79705		City, State ZIP:	Carlsbad NM 88220
Phone:	432-704-5178	Email:	dmeir@levu.com & akp@cs@ktnc.com	

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

Project Name:	FEU 1380 FEU 19	Turn Around
Project Number:	42918148	Routine ☐
P.O. Number:	220-4980	Rush: <i>same day</i>
Sampler's Name:	Anna Byers	Due Date:

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	(Yes) No
Temperature (°C):		0.0			Thermometer	
Received Intact:		Yes	No			
Cooler Custody Seals:		Yes	No	N/A	Correction Factor:	
Sample Custody Seals:		Yes	No	N/A	Total Containers:	

[illegible]

Total	200.7 / 6010	200.8 / 6020:
Circle Method(s) and Metal(s) to be analyzed	8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn	TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xencio, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xencio will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xencio. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xencio, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>Quana Payer</i>	<i>[Signature]</i>	06/04/2019 11:40	2 <i>[Signature]</i>	<i>[Signature]</i>	06/04/2019 11:50
3			4	<i>[Signature]</i>	06/05/19
5			6		122233



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/05/2019 12:23:00 PM

Work Order #: 626509

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

Brianna Teel

Date: 06/05/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/05/2019

Analytical Report 627198

for
LT Environmental, Inc.

Project Manager: Dan Moir

JRU 138 @ JRU 19

012918148

13-JUN-19

Collected By: Client



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

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



13-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **627198**

JRU 138 @ JRU 19

Project Address: Delaware Basin

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) 627198. 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. 627198 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

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 627198



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS27	S	06-04-19 17:30	0.5 ft	627198-001
FS28	S	06-04-19 17:34	1.0 ft	627198-002
FS29	S	06-04-19 17:45	1.0 ft	627198-003



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *JRU 138 @ JRU 19*

Project ID: 012918148
Work Order Number(s): 627198

Report Date: 13-JUN-19
Date Received: 06/11/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3091986 BTEX by EPA 8021B

Surrogate 1,4-Difluorobenzene, Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected. Samples affected are: 627197-001 S. Parent Sample clean. Data accepted. Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Certificate of Analysis Summary 627198

LT Environmental, Inc., Arvada, CO

Project Name: JRU 138 @ JRU 19



Project Id: 012918148
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Tue Jun-11-19 11:20 am
Report Date: 13-JUN-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	627198-001	627198-002	627198-003			
	Field Id:	FS27	FS28	FS29			
	Depth:	0.5- ft	1.0- ft	1.0- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Jun-04-19 17:30	Jun-04-19 17:34	Jun-04-19 17:45			
BTEX by EPA 8021B	Extracted:	Jun-11-19 12:30	Jun-11-19 12:30	Jun-11-19 12:30			
	Analyzed:	Jun-11-19 20:53	Jun-11-19 21:12	Jun-11-19 21:31			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199			
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199			
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199			
m,p-Xylenes		0.00506 0.00401	<0.00402 0.00402	<0.00398 0.00398			
o-Xylene		0.00635 0.00200	<0.00201 0.00201	<0.00199 0.00199			
Total Xylenes		0.0114 0.00200	<0.00201 0.00201	<0.00199 0.00199			
Total BTEX		0.0114 0.00200	<0.00201 0.00201	<0.00199 0.00199			
Chloride by EPA 300	Extracted:	Jun-11-19 16:10	Jun-11-19 16:10	Jun-11-19 16:10			
	Analyzed:	Jun-11-19 19:03	Jun-11-19 19:10	Jun-11-19 19:17			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		695 5.00	188 5.00	194 5.03			
TPH by SW8015 Mod	Extracted:	Jun-11-19 16:00	Jun-11-19 12:00	Jun-11-19 12:00			
	Analyzed:	Jun-12-19 01:57	Jun-11-19 18:51	Jun-11-19 19:11			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		62.8 15.0	<15.0 15.0	<15.0 15.0			
Diesel Range Organics (DRO)		2940 15.0	60.3 15.0	89.9 15.0			
Motor Oil Range Hydrocarbons (MRO)		400 15.0	16.8 15.0	24.3 15.0			
Total TPH		3400 15.0	77.1 15.0	114 15.0			
Total GRO-DRO		3000 15.0	60.3 15.0	89.9 15.0			

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 627198



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: FS27
Lab Sample Id: 627198-001

Matrix: Soil
Date Collected: 06.04.19 17.30

Date Received: 06.11.19 11.20
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091948

Date Prep: 06.11.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	695	5.00	mg/kg	06.11.19 19.03		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091980

Date Prep: 06.11.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	62.8	15.0	mg/kg	06.12.19 01.57		1
Diesel Range Organics (DRO)	C10C28DRO	2940	15.0	mg/kg	06.12.19 01.57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	400	15.0	mg/kg	06.12.19 01.57		1
Total TPH	PHC635	3400	15.0	mg/kg	06.12.19 01.57		1
Total GRO-DRO	PHC628	3000	15.0	mg/kg	06.12.19 01.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	06.12.19 01.57	
o-Terphenyl	84-15-1	128	%	70-135	06.12.19 01.57	



Certificate of Analytical Results 627198



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS27**
Lab Sample Id: 627198-001

Matrix: Soil
Date Collected: 06.04.19 17.30

Date Received: 06.11.19 11.20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3091986

Date Prep: 06.11.19 12.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.11.19 20.53	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.11.19 20.53	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.11.19 20.53	U	1
m,p-Xylenes	179601-23-1	0.00506	0.00401	mg/kg	06.11.19 20.53		1
o-Xylene	95-47-6	0.00635	0.00200	mg/kg	06.11.19 20.53		1
Total Xylenes	1330-20-7	0.0114	0.00200	mg/kg	06.11.19 20.53		1
Total BTEX		0.0114	0.00200	mg/kg	06.11.19 20.53		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	06.11.19 20.53		
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.11.19 20.53		



Certificate of Analytical Results 627198



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS28**
Lab Sample Id: 627198-002

Matrix: Soil
Date Collected: 06.04.19 17.34

Date Received: 06.11.19 11.20
Sample Depth: 1.0 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091948

Date Prep: 06.11.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	188	5.00	mg/kg	06.11.19 19.10		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091979

Date Prep: 06.11.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 18.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	60.3	15.0	mg/kg	06.11.19 18.51		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	16.8	15.0	mg/kg	06.11.19 18.51		1
Total TPH	PHC635	77.1	15.0	mg/kg	06.11.19 18.51		1
Total GRO-DRO	PHC628	60.3	15.0	mg/kg	06.11.19 18.51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	06.11.19 18.51	
o-Terphenyl	84-15-1	98	%	70-135	06.11.19 18.51	



Certificate of Analytical Results 627198



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS28**
Lab Sample Id: 627198-002

Matrix: Soil
Date Collected: 06.04.19 17.34

Date Received: 06.11.19 11.20
Sample Depth: 1.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3091986

Date Prep: 06.11.19 12.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.11.19 21.12	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.11.19 21.12	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.11.19 21.12	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.11.19 21.12	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.11.19 21.12	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.11.19 21.12	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.11.19 21.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	06.11.19 21.12		
1,4-Difluorobenzene	540-36-3	105	%	70-130	06.11.19 21.12		



Certificate of Analytical Results 627198



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS29**
Lab Sample Id: 627198-003

Matrix: Soil
Date Collected: 06.04.19 17.45

Date Received: 06.11.19 11.20
Sample Depth: 1.0 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091948

Date Prep: 06.11.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	194	5.03	mg/kg	06.11.19 19.17		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091979

Date Prep: 06.11.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 19.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	89.9	15.0	mg/kg	06.11.19 19.11		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	24.3	15.0	mg/kg	06.11.19 19.11		1
Total TPH	PHC635	114	15.0	mg/kg	06.11.19 19.11		1
Total GRO-DRO	PHC628	89.9	15.0	mg/kg	06.11.19 19.11		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	06.11.19 19.11	
o-Terphenyl	84-15-1	95	%	70-135	06.11.19 19.11	



Certificate of Analytical Results 627198



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS29**
Lab Sample Id: 627198-003

Matrix: Soil
Date Collected: 06.04.19 17.45

Date Received: 06.11.19 11.20
Sample Depth: 1.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3091986

Date Prep: 06.11.19 12.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.11.19 21.31	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.11.19 21.31	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.11.19 21.31	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.11.19 21.31	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.11.19 21.31	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.11.19 21.31	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.11.19 21.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	128	%	70-130	06.11.19 21.31		
1,4-Difluorobenzene	540-36-3	98	%	70-130	06.11.19 21.31		

- 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 627198

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: Chloride by EPA 300

Seq Number: 3091948

MB Sample Id: 7679658-1-BLK

Matrix: Solid

LCS Sample Id: 7679658-1-BKS

Prep Method: E300P

Date Prep: 06.11.19

LCSD Sample Id: 7679658-1-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	230	92	230	92	90-110	0	20	mg/kg	06.11.19 17:03	

Analytical Method: Chloride by EPA 300

Seq Number: 3091948

Parent Sample Id: 627197-001

Matrix: Soil

MS Sample Id: 627197-001 S

Prep Method: E300P

Date Prep: 06.11.19

MSD Sample Id: 627197-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.4	249	257	97	257	97	90-110	0	20	mg/kg	06.11.19 17:57	

Analytical Method: Chloride by EPA 300

Seq Number: 3091948

Parent Sample Id: 627199-002

Matrix: Soil

MS Sample Id: 627199-002 S

Prep Method: E300P

Date Prep: 06.11.19

MSD Sample Id: 627199-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	626	250	860	94	858	93	90-110	0	20	mg/kg	06.11.19 19:39	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091979

MB Sample Id: 7679720-1-BLK

Matrix: Solid

LCS Sample Id: 7679720-1-BKS

Prep Method: TX1005P

Date Prep: 06.11.19

LCSD Sample Id: 7679720-1-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	1050	105	1060	106	70-135	1	20	mg/kg	06.11.19 11:24	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1020	102	70-135	1	20	mg/kg	06.11.19 11:24	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	88		121		117		70-135	%	06.11.19 11:24
o-Terphenyl	88		99		97		70-135	%	06.11.19 11:24

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 627198

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091980

MB Sample Id: 7679721-1-BLK

Matrix: Solid

LCS Sample Id: 7679721-1-BKS

Prep Method: TX1005P

Date Prep: 06.11.19

LCSD Sample Id: 7679721-1-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	1090	109	1060	106	70-135	3	20	mg/kg	06.11.19 20:10	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	1020	102	70-135	2	20	mg/kg	06.11.19 20:10	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	92		123		125		70-135	%	06.11.19 20:10			
o-Terphenyl	92		116		117		70-135	%	06.11.19 20:10			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091979

Parent Sample Id: 627196-001

Matrix: Soil

MS Sample Id: 627196-001 S

Prep Method: TX1005P

Date Prep: 06.11.19

MSD Sample Id: 627196-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	1040	104	1060	106	70-135	2	20	mg/kg	06.11.19 12:22	
Diesel Range Organics (DRO)	<8.12	999	1010	101	1030	103	70-135	2	20	mg/kg	06.11.19 12:22	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			124		126		70-135	%	06.11.19 12:22			
o-Terphenyl			117		119		70-135	%	06.11.19 12:22			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091980

Parent Sample Id: 627199-001

Matrix: Soil

MS Sample Id: 627199-001 S

Prep Method: TX1005P

Date Prep: 06.11.19

MSD Sample Id: 627199-001 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)	<8.00	1000	1150	115	1130	113	70-135	2	20	mg/kg	06.11.19 21:08	
Diesel Range Organics (DRO)	<8.13	1000	1130	113	1120	112	70-135	1	20	mg/kg	06.11.19 21:08	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			129		127		70-135	%	06.11.19 21:08			
o-Terphenyl			120		122		70-135	%	06.11.19 21:08			

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

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

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 627198

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091986

MB Sample Id: 7679725-1-BLK

Matrix: Solid

LCS Sample Id: 7679725-1-BKS

Prep Method: SW5030B

Date Prep: 06.11.19

LCSD Sample Id: 7679725-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0921	92	0.102	102	70-130	10	35	mg/kg	06.11.19 17:07	
Toluene	<0.00199	0.0996	0.0911	91	0.0969	97	70-130	6	35	mg/kg	06.11.19 17:07	
Ethylbenzene	<0.00199	0.0996	0.0952	96	0.100	100	70-130	5	35	mg/kg	06.11.19 17:07	
m,p-Xylenes	<0.00398	0.199	0.190	95	0.199	100	70-130	5	35	mg/kg	06.11.19 17:07	
o-Xylene	<0.00199	0.0996	0.0946	95	0.0983	98	70-130	4	35	mg/kg	06.11.19 17:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		99		100		70-130	%	06.11.19 17:07
4-Bromofluorobenzene	97		97		97		70-130	%	06.11.19 17:07

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091986

Parent Sample Id: 627197-001

Matrix: Soil

MS Sample Id: 627197-001 S

Prep Method: SW5030B

Date Prep: 06.11.19

MSD Sample Id: 627197-001 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	0.123	123	0.101	101	70-130	20	35	mg/kg	06.11.19 17:45	
Toluene	<0.00200	0.100	0.123	123	0.0963	96	70-130	24	35	mg/kg	06.11.19 17:45	
Ethylbenzene	<0.00200	0.100	0.127	127	0.0993	99	70-130	24	35	mg/kg	06.11.19 17:45	
m,p-Xylenes	<0.00401	0.200	0.234	117	0.197	99	70-130	17	35	mg/kg	06.11.19 17:45	
o-Xylene	<0.00200	0.100	0.115	115	0.0977	98	70-130	16	35	mg/kg	06.11.19 17:45	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	167	**	101		70-130	%	06.11.19 17:45
4-Bromofluorobenzene	169	**	99		70-130	%	06.11.19 17:45

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

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

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

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



www.xenco.com Page 1 of 1

Work Order Comments									
Program: UST/PST		☐ RP	☐ Growfields	☐ RC	☐ Spurfund				
State of Project:									
Reporting: Level II		☐ Level III	☐ ST/UST	☐ RP	☒ Level IV				
Deliverables: EDD		☐	Adapt	☐	Other:				

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

A 8015)
 PA 0=8021)
 (EPA 300.0)

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EP)	BTEX (E)	Chloride	Sample Comments									
ES27	S	6/4/19	1730	0.5'	1													
ES28	S		1740	1.0'	1													
ES29	S	↑	1745	1.0'	1													
																		

Total 200.7 / 6010	200.8 / 6020:	
8RCRA	13PPM	Texas 11
8RCRA	13PPM	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn
TCLP / SPLP 6010:	8RCRA	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
		1631 / 245.1 / 7470 / 7471 : Hq

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>Linne Byer</i>	<i>Ward</i>	06-07-19 16:40		<i>Ward</i>	06/19 11:30
2		4			
3		6			
4					
5					



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/11/2019 11:20:00 AM

Work Order #: 627198

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

Brianna Teel

Date: 06/11/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/11/2019

Analytical Report 627199

for
LT Environmental, Inc.

Project Manager: Dan Moir

JRU 138 @ JRU 19

012918148

13-JUN-19

Collected By: Client



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

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



13-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **627199**

JRU 138 @ JRU 19

Project Address: Delaware Basin

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) 627199. 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. 627199 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

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 627199



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS26	S	06-04-19 09:45	8 - 15 ft	627199-001
SW23	S	06-04-19 09:55	0 - 15 ft	627199-002
SW34	S	06-04-19 10:05	0 - 15 ft	627199-003
SW35	S	06-04-19 10:15	8 - 15 ft	627199-004



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *JRU 138 @ JRU 19*

Project ID: 012918148
Work Order Number(s): 627199

Report Date: 13-JUN-19
Date Received: 06/11/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3091986 BTEX by EPA 8021B

Surrogate 1,4-Difluorobenzene, Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected. Samples affected are: 627197-001 S. Parent Sample clean. Data accepted. Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Certificate of Analysis Summary 627199

LT Environmental, Inc., Arvada, CO

Project Name: JRU 138 @ JRU 19



Project Id: 012918148
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Tue Jun-11-19 11:20 am
Report Date: 13-JUN-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	627199-001	627199-002	627199-003	627199-004		
	Field Id:	FS26	SW23	SW34	SW35		
	Depth:	8-15 ft	0-15 ft	0-15 ft	8-15 ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	Jun-04-19 09:45	Jun-04-19 09:55	Jun-04-19 10:05	Jun-04-19 10:15		
BTEX by EPA 8021B	Extracted:	Jun-11-19 12:30	Jun-11-19 12:30	Jun-11-19 12:30	Jun-11-19 12:30		
	Analyzed:	Jun-11-19 23:04	Jun-11-19 23:23	Jun-11-19 23:42	Jun-12-19 00:01		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
	Benzene	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200		
	Toluene	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200		
	Ethylbenzene	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200		
	m,p-Xylenes	<0.00399 0.00399	<0.00397 0.00397	<0.00400 0.00400	<0.00401 0.00401		
	o-Xylene	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200		
	Total Xylenes	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200		
	Total BTEX	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200		
Chloride by EPA 300	Extracted:	Jun-11-19 16:10	Jun-11-19 16:10	Jun-11-19 16:10	Jun-11-19 16:10		
	Analyzed:	Jun-11-19 19:25	Jun-11-19 19:32	Jun-11-19 19:54	Jun-11-19 20:01		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
	Chloride	170 4.98	626 5.00	979 5.02	833 4.98		
TPH by SW8015 Mod	Extracted:	Jun-11-19 16:00	Jun-11-19 16:00	Jun-11-19 16:00	Jun-11-19 16:00		
	Analyzed:	Jun-11-19 20:48	Jun-11-19 21:46	Jun-11-19 22:06	Jun-11-19 22:25		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0		
	Diesel Range Organics (DRO)	<15.0 15.0	15.5 14.9	99.0 15.0	30.4 15.0		
	Motor Oil Range Hydrocarbons (MRO)	<15.0 15.0	<14.9 14.9	23.1 15.0	<15.0 15.0		
	Total TPH	<15.0 15.0	15.5 14.9	122 15.0	30.4 15.0		
	Total GRO-DRO	<15.0 15.0	15.5 14.9	99.0 15.0	30.4 15.0		

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 627199



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS26**
Lab Sample Id: 627199-001

Matrix: Soil
Date Collected: 06.04.19 09.45

Date Received: 06.11.19 11.20
Sample Depth: 8 - 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091948

Date Prep: 06.11.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	170	4.98	mg/kg	06.11.19 19.25		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091980

Date Prep: 06.11.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 20.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.11.19 20.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.11.19 20.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.11.19 20.48	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.11.19 20.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	06.11.19 20.48	
o-Terphenyl	84-15-1	106	%	70-135	06.11.19 20.48	



Certificate of Analytical Results 627199



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **FS26**
Lab Sample Id: 627199-001

Matrix: Soil
Date Collected: 06.04.19 09.45

Date Received: 06.11.19 11.20
Sample Depth: 8 - 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3091986

Date Prep: 06.11.19 12.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.11.19 23.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.11.19 23.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.11.19 23.04	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.11.19 23.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.11.19 23.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.11.19 23.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.11.19 23.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	06.11.19 23.04		
1,4-Difluorobenzene	540-36-3	103	%	70-130	06.11.19 23.04		



Certificate of Analytical Results 627199



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW23**
Lab Sample Id: 627199-002

Matrix: Soil
Date Collected: 06.04.19 09:55

Date Received: 06.11.19 11:20
Sample Depth: 0 - 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091948

Date Prep: 06.11.19 16:10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	626	5.00	mg/kg	06.11.19 19:32		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091980

Date Prep: 06.11.19 16:00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.11.19 21:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	15.5	14.9	mg/kg	06.11.19 21:46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.11.19 21:46	U	1
Total TPH	PHC635	15.5	14.9	mg/kg	06.11.19 21:46		1
Total GRO-DRO	PHC628	15.5	14.9	mg/kg	06.11.19 21:46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	06.11.19 21:46	
o-Terphenyl	84-15-1	102	%	70-135	06.11.19 21:46	



Certificate of Analytical Results 627199



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW23**
Lab Sample Id: 627199-002

Matrix: Soil
Date Collected: 06.04.19 09.55

Date Received: 06.11.19 11.20
Sample Depth: 0 - 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3091986

Date Prep: 06.11.19 12.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.11.19 23.23	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.11.19 23.23	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.11.19 23.23	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.11.19 23.23	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.11.19 23.23	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.11.19 23.23	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.11.19 23.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	06.11.19 23.23		
4-Bromofluorobenzene	460-00-4	107	%	70-130	06.11.19 23.23		



Certificate of Analytical Results 627199



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW34**
Lab Sample Id: 627199-003

Matrix: Soil
Date Collected: 06.04.19 10.05

Date Received: 06.11.19 11.20
Sample Depth: 0 - 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091948

Date Prep: 06.11.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	979	5.02	mg/kg	06.11.19 19.54		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091980

Date Prep: 06.11.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 22.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	99.0	15.0	mg/kg	06.11.19 22.06		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	23.1	15.0	mg/kg	06.11.19 22.06		1
Total TPH	PHC635	122	15.0	mg/kg	06.11.19 22.06		1
Total GRO-DRO	PHC628	99.0	15.0	mg/kg	06.11.19 22.06		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	06.11.19 22.06	
o-Terphenyl	84-15-1	101	%	70-135	06.11.19 22.06	



Certificate of Analytical Results 627199



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW34**
Lab Sample Id: 627199-003

Matrix: Soil
Date Collected: 06.04.19 10.05

Date Received: 06.11.19 11.20
Sample Depth: 0 - 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3091986

Date Prep: 06.11.19 12.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.11.19 23.42	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.11.19 23.42	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.11.19 23.42	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.11.19 23.42	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.11.19 23.42	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.11.19 23.42	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.11.19 23.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.11.19 23.42		
4-Bromofluorobenzene	460-00-4	113	%	70-130	06.11.19 23.42		



Certificate of Analytical Results 627199



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW35**
Lab Sample Id: 627199-004

Matrix: Soil
Date Collected: 06.04.19 10.15

Date Received: 06.11.19 11.20
Sample Depth: 8 - 15 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091948

Date Prep: 06.11.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	833	4.98	mg/kg	06.11.19 20.01		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091980

Date Prep: 06.11.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 22.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	30.4	15.0	mg/kg	06.11.19 22.25		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.11.19 22.25	U	1
Total TPH	PHC635	30.4	15.0	mg/kg	06.11.19 22.25		1
Total GRO-DRO	PHC628	30.4	15.0	mg/kg	06.11.19 22.25		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	06.11.19 22.25	
o-Terphenyl	84-15-1	99	%	70-135	06.11.19 22.25	



Certificate of Analytical Results 627199



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **SW35**
Lab Sample Id: 627199-004

Matrix: Soil
Date Collected: 06.04.19 10.15

Date Received: 06.11.19 11.20
Sample Depth: 8 - 15 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3091986

Date Prep: 06.11.19 12.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.12.19 00.01	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.12.19 00.01	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.12.19 00.01	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.12.19 00.01	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.12.19 00.01	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.12.19 00.01	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.12.19 00.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	06.12.19 00.01		
4-Bromofluorobenzene	460-00-4	127	%	70-130	06.12.19 00.01		

- 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 627199

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: Chloride by EPA 300

Seq Number: 3091948

MB Sample Id: 7679658-1-BLK

Matrix: Solid

LCS Sample Id: 7679658-1-BKS

Prep Method: E300P

Date Prep: 06.11.19

LCSD Sample Id: 7679658-1-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	230	92	230	92	90-110	0	20	mg/kg	06.11.19 17:03	

Analytical Method: Chloride by EPA 300

Seq Number: 3091948

Parent Sample Id: 627197-001

Matrix: Soil

MS Sample Id: 627197-001 S

Prep Method: E300P

Date Prep: 06.11.19

MSD Sample Id: 627197-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.4	249	257	97	257	97	90-110	0	20	mg/kg	06.11.19 17:57	

Analytical Method: Chloride by EPA 300

Seq Number: 3091948

Parent Sample Id: 627199-002

Matrix: Soil

MS Sample Id: 627199-002 S

Prep Method: E300P

Date Prep: 06.11.19

MSD Sample Id: 627199-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	626	250	860	94	858	93	90-110	0	20	mg/kg	06.11.19 19:39	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091980

MB Sample Id: 7679721-1-BLK

Matrix: Solid

LCS Sample Id: 7679721-1-BKS

Prep Method: TX1005P

Date Prep: 06.11.19

LCSD Sample Id: 7679721-1-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	1090	109	1060	106	70-135	3	20	mg/kg	06.11.19 20:10	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	1020	102	70-135	2	20	mg/kg	06.11.19 20:10	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		123		125		70-135	%	06.11.19 20:10
o-Terphenyl	92		116		117		70-135	%	06.11.19 20:10

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

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

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

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



QC Summary 627199

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091980

Parent Sample Id: 627199-001

Matrix: Soil

MS Sample Id: 627199-001 S

Prep Method: TX1005P

Date Prep: 06.11.19

MSD Sample Id: 627199-001 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)	<8.00	1000	1150	115	1130	113	70-135	2	20	mg/kg	06.11.19 21:08	
Diesel Range Organics (DRO)	<8.13	1000	1130	113	1120	112	70-135	1	20	mg/kg	06.11.19 21:08	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		127		70-135	%	06.11.19 21:08
o-Terphenyl	120		122		70-135	%	06.11.19 21:08

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091986

MB Sample Id: 7679725-1-BLK

Matrix: Solid

LCS Sample Id: 7679725-1-BKS

Prep Method: SW5030B

Date Prep: 06.11.19

LCSD Sample Id: 7679725-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0921	92	0.102	102	70-130	10	35	mg/kg	06.11.19 17:07	
Toluene	<0.00199	0.0996	0.0911	91	0.0969	97	70-130	6	35	mg/kg	06.11.19 17:07	
Ethylbenzene	<0.00199	0.0996	0.0952	96	0.100	100	70-130	5	35	mg/kg	06.11.19 17:07	
m,p-Xylenes	<0.00398	0.199	0.190	95	0.199	100	70-130	5	35	mg/kg	06.11.19 17:07	
o-Xylene	<0.00199	0.0996	0.0946	95	0.0983	98	70-130	4	35	mg/kg	06.11.19 17:07	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		99		100		70-130	%	06.11.19 17:07
4-Bromofluorobenzene	97		97		97		70-130	%	06.11.19 17:07

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091986

Parent Sample Id: 627197-001

Matrix: Soil

MS Sample Id: 627197-001 S

Prep Method: SW5030B

Date Prep: 06.11.19

MSD Sample Id: 627197-001 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	0.123	123	0.101	101	70-130	20	35	mg/kg	06.11.19 17:45	
Toluene	<0.00200	0.100	0.123	123	0.0963	96	70-130	24	35	mg/kg	06.11.19 17:45	
Ethylbenzene	<0.00200	0.100	0.127	127	0.0993	99	70-130	24	35	mg/kg	06.11.19 17:45	
m,p-Xylenes	<0.00401	0.200	0.234	117	0.197	99	70-130	17	35	mg/kg	06.11.19 17:45	
o-Xylene	<0.00200	0.100	0.115	115	0.0977	98	70-130	16	35	mg/kg	06.11.19 17:45	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	167	**	101		70-130	%	06.11.19 17:45
4-Bromofluorobenzene	169	**	99		70-130	%	06.11.19 17:45

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

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

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:

1027194

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:	Don Moir	Bill to: (if different)	Kyle Litke
Company Name:	LT Environmental Inc.	Company Name:	XTO Energy
Address:	3300 North 4 Street	Address:	3104 E. Greene Street
City, State ZIP:	Midland TX 79705	City, State ZIP:	Carsbad, NM 88220
Phone:	432 704 5178	Email:	dmair@lkenv.com dajays@lkenv.com

Project Name:	JRU 138@JRU 19	Turn Around	☐ Routine ☐ Rush: same day
Project Number:	012918148	Due Date:	
P.O. Number:	022-4980		
Sampler's Name:	Anna Byers		

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

Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☐ No ☒
Temperature (°C):	0000	Thermometer:	12
Received Intact:	Yes ☒ No ☐	Correction Factor:	0.1
Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:	
Sample Custody Seals:	Yes ☒ No ☐		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	Analysis Request	Work Order Notes
FS2L	S	6/4/19	0445	8-15'	2	TPH (EPA 8015)	
SW33	S		0955	0-15'	2	BTEX (EPA 8021)	
SW34	S		1005	0-15'	2	Chloride (EPA 800.0)	
SW35	S		1015	8-15'	2		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	Analysis Request	Work Order Notes
FS2L	S	6/4/19	0445	8-15'	2	TPH (EPA 8015)	
SW33	S		0955	0-15'	2	BTEX (EPA 8021)	
SW34	S		1005	0-15'	2	Chloride (EPA 800.0)	
SW35	S		1015	8-15'	2		

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Anna Byers	Jetty	06-07-19 16:40		Anna Byers	06/11/19 11:20



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/11/2019 11:20:00 AM

Work Order #: 627199

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

Brianna Teel

Date: 06/11/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/11/2019

Analytical Report 627200

for
LT Environmental, Inc.

Project Manager: Dan Moir

JRU 138 @ JRU 19

012918148

13-JUN-19

Collected By: Client



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

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



13-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **627200**

JRU 138 @ JRU 19

Project Address: Delaware Basin

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) 627200. 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. 627200 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

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

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



Sample Cross Reference 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH35	S	06-06-19 12:20	1.0 ft	627200-001
PH35A	S	06-06-19 12:55	16 ft	627200-002
PH36	S	06-06-19 13:45	1.0 ft	627200-003
PH36A	S	06-06-19 14:10	16 ft	627200-004
PH37	S	06-06-19 15:00	4 ft	627200-005
PH37A	S	06-06-19 15:15	15.5 ft	627200-006
PH38	S	06-06-19 16:55	0.5 ft	627200-007
PH38A	S	06-06-19 17:10	4.0 ft	627200-008
PH22B	S	06-06-19 17:55	4.5 ft	627200-009



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *JRU 138 @ JRU 19*

Project ID: 012918148
Work Order Number(s): 627200

Report Date: 13-JUN-19
Date Received: 06/11/2019

Sample receipt non conformance and comments:

None

Sample receipt non conformance and comments per sample:

None

Analytical non conformance and comments:

Batch: LBA-3091986 BTEX by EPA 8021B

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

Surrogate 1,4-Difluorobenzene, Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected. Samples affected are: 627197-001 S. Parent Sample clean. Data accepted.

Samples affected are: 627197-001 S, 627200-001.

Batch: LBA-3092067 BTEX by EPA 8021B

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; data confirmed by re-analysis.

Samples affected are: 627200-003.



Certificate of Analysis Summary 627200

LT Environmental, Inc., Arvada, CO

Project Name: JRU 138 @ JRU 19



Project Id: 012918148
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Tue Jun-11-19 11:20 am
Report Date: 13-JUN-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627200-001	627200-002	627200-003	627200-004	627200-005	627200-006
	<i>Field Id:</i>	PH35	PH35A	PH36	PH36A	PH37	PH37A
	<i>Depth:</i>	1.0- ft	16- ft	1.0- ft	16- ft	4- ft	15.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-06-19 12:20	Jun-06-19 12:55	Jun-06-19 13:45	Jun-06-19 14:10	Jun-06-19 15:00	Jun-06-19 15:15
BTEX by EPA 8021B	<i>Extracted:</i>	Jun-11-19 12:30	Jun-12-19 16:24	Jun-12-19 16:24	Jun-12-19 16:24	Jun-12-19 16:24	Jun-12-19 16:24
	<i>Analyzed:</i>	Jun-12-19 00:20	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00400 0.00400	<0.00402 0.00402	<0.00399 0.00399	<0.00398 0.00398	<0.00401 0.00401
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Jun-11-19 16:10	Jun-11-19 16:10	Jun-11-19 16:10	Jun-11-19 16:10	Jun-11-19 16:10	Jun-11-19 16:10
	<i>Analyzed:</i>	Jun-11-19 20:23	Jun-11-19 20:30	Jun-11-19 20:37	Jun-11-19 20:44	Jun-11-19 20:52	Jun-11-19 20:59
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		38.2 4.96	22.4 5.05	153 5.05	16.5 4.98	1350 5.00	163 5.04
TPH by SW8015 Mod	<i>Extracted:</i>	Jun-11-19 16:00	Jun-11-19 16:00	Jun-11-19 16:00	Jun-11-19 16:00	Jun-11-19 16:00	Jun-11-19 16:00
	<i>Analyzed:</i>	Jun-11-19 22:44	Jun-11-19 23:03	Jun-11-19 23:23	Jun-11-19 23:42	Jun-12-19 00:01	Jun-12-19 00:20
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 627200

LT Environmental, Inc., Arvada, CO

Project Name: JRU 138 @ JRU 19



Project Id: 012918148
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Tue Jun-11-19 11:20 am
Report Date: 13-JUN-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	627200-007	627200-008	627200-009			
	Field Id:	PH38	PH38A	PH22B			
	Depth:	0.5- ft	4.0- ft	4.5- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Jun-06-19 16:55	Jun-06-19 17:10	Jun-06-19 17:55			
BTEX by EPA 8021B	Extracted:	Jun-12-19 16:24	Jun-12-19 16:24	Jun-12-19 16:24			
	Analyzed:	*** ** *	*** ** *	*** ** *			
	Units/RL:	mg/kg	mg/kg	mg/kg			
		RL	RL	RL			
Benzene		<0.00200	<0.00199	<0.00200			
Toluene		<0.00200	<0.00199	<0.00200			
Ethylbenzene		<0.00200	<0.00199	<0.00200			
m,p-Xylenes		<0.00399	<0.00398	<0.00401			
o-Xylene		<0.00200	<0.00199	<0.00200			
Total Xylenes		<0.00200	<0.00199	<0.00200			
Total BTEX		<0.00200	<0.00199	<0.00200			
Chloride by EPA 300	Extracted:	Jun-11-19 16:10	Jun-11-19 17:00	Jun-11-19 17:00			
	Analyzed:	Jun-11-19 21:06	Jun-11-19 17:53	Jun-11-19 17:58			
	Units/RL:	mg/kg	mg/kg	mg/kg			
Chloride		7370	2270	7030			
TPH by SW8015 Mod	Extracted:	Jun-11-19 16:00	Jun-11-19 16:00	Jun-11-19 16:00			
	Analyzed:	Jun-12-19 00:59	Jun-12-19 01:18	Jun-12-19 01:37			
	Units/RL:	mg/kg	mg/kg	mg/kg			
Gasoline Range Hydrocarbons (GRO)		<15.0	<15.0	<15.0			
Diesel Range Organics (DRO)		402	637	20.6			
Motor Oil Range Hydrocarbons (MRO)		126	167	<15.0			
Total TPH		528	804	20.6			
Total GRO-DRO		402	637	20.6			

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH35**
Lab Sample Id: 627200-001

Matrix: Soil
Date Collected: 06.06.19 12.20

Date Received: 06.11.19 11.20
Sample Depth: 1.0 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091948

Date Prep: 06.11.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	38.2	4.96	mg/kg	06.11.19 20.23		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091980

Date Prep: 06.11.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 22.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.11.19 22.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.11.19 22.44	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.11.19 22.44	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.11.19 22.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	06.11.19 22.44	
o-Terphenyl	84-15-1	105	%	70-135	06.11.19 22.44	



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH35**
Lab Sample Id: 627200-001

Matrix: Soil
Date Collected: 06.06.19 12.20

Date Received: 06.11.19 11.20
Sample Depth: 1.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3091986

Date Prep: 06.11.19 12.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.12.19 00.20	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.12.19 00.20	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.12.19 00.20	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.12.19 00.20	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.12.19 00.20	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.12.19 00.20	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.12.19 00.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	141	%	70-130	06.12.19 00.20	**	
1,4-Difluorobenzene	540-36-3	104	%	70-130	06.12.19 00.20		



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH35A**
Lab Sample Id: 627200-002

Matrix: Soil
Date Collected: 06.06.19 12.55

Date Received: 06.11.19 11.20
Sample Depth: 16 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091948

Date Prep: 06.11.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.4	5.05	mg/kg	06.11.19 20.30		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091980

Date Prep: 06.11.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 23.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.11.19 23.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.11.19 23.03	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.11.19 23.03	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.11.19 23.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.11.19 23.03	
o-Terphenyl	84-15-1	100	%	70-135	06.11.19 23.03	



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH35A**
Lab Sample Id: 627200-002

Matrix: Soil
Date Collected: 06.06.19 12.55

Date Received: 06.11.19 11.20
Sample Depth: 16 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3092067

Date Prep: 06.12.19 16.24

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.12.19 04.43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.12.19 04.43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.12.19 04.43	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.12.19 04.43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.12.19 04.43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.12.19 04.43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.12.19 04.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.12.19 04.43		
4-Bromofluorobenzene	460-00-4	107	%	70-130	06.12.19 04.43		



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH36**
Lab Sample Id: 627200-003

Matrix: Soil
Date Collected: 06.06.19 13.45

Date Received: 06.11.19 11.20
Sample Depth: 1.0 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091948

Date Prep: 06.11.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	153	5.05	mg/kg	06.11.19 20.37		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091980

Date Prep: 06.11.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 23.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.11.19 23.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.11.19 23.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.11.19 23.23	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.11.19 23.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	06.11.19 23.23	
o-Terphenyl	84-15-1	98	%	70-135	06.11.19 23.23	



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH36**
Lab Sample Id: 627200-003

Matrix: Soil
Date Collected: 06.06.19 13.45

Date Received: 06.11.19 11.20
Sample Depth: 1.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3092067

Date Prep: 06.12.19 16.24

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.12.19 05.02	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.12.19 05.02	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.12.19 05.02	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.12.19 05.02	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.12.19 05.02	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.12.19 05.02	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.12.19 05.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	06.12.19 05.02		
4-Bromofluorobenzene	460-00-4	158	%	70-130	06.12.19 05.02	**	



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH36A**
Lab Sample Id: 627200-004

Matrix: Soil
Date Collected: 06.06.19 14.10

Date Received: 06.11.19 11.20
Sample Depth: 16 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091948

Date Prep: 06.11.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.5	4.98	mg/kg	06.11.19 20.44		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091980

Date Prep: 06.11.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 23.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.11.19 23.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.11.19 23.42	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.11.19 23.42	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.11.19 23.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	06.11.19 23.42	
o-Terphenyl	84-15-1	106	%	70-135	06.11.19 23.42	



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH36A**
Lab Sample Id: 627200-004

Matrix: Soil
Date Collected: 06.06.19 14.10

Date Received: 06.11.19 11.20
Sample Depth: 16 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3092067

Date Prep: 06.12.19 16.24

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.12.19 05.21	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.12.19 05.21	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.12.19 05.21	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.12.19 05.21	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.12.19 05.21	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.12.19 05.21	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.12.19 05.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.12.19 05.21		
4-Bromofluorobenzene	460-00-4	122	%	70-130	06.12.19 05.21		



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH37**
Lab Sample Id: 627200-005

Matrix: Soil
Date Collected: 06.06.19 15.00

Date Received: 06.11.19 11.20
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091948

Date Prep: 06.11.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1350	5.00	mg/kg	06.11.19 20.52		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091980

Date Prep: 06.11.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.12.19 00.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.12.19 00.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.12.19 00.01	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.12.19 00.01	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.12.19 00.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	06.12.19 00.01	
o-Terphenyl	84-15-1	101	%	70-135	06.12.19 00.01	



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH37**
Lab Sample Id: 627200-005

Matrix: Soil
Date Collected: 06.06.19 15.00

Date Received: 06.11.19 11.20
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DVM

% Moisture:

Analyst: DVM

Date Prep: 06.12.19 16.24

Basis: Wet Weight

Seq Number: 3092067

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.12.19 05.40	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.12.19 05.40	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.12.19 05.40	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.12.19 05.40	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.12.19 05.40	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.12.19 05.40	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.12.19 05.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	06.12.19 05.40		
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.12.19 05.40		



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH37A**
Lab Sample Id: 627200-006

Matrix: Soil
Date Collected: 06.06.19 15.15

Date Received: 06.11.19 11.20
Sample Depth: 15.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091948

Date Prep: 06.11.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	163	5.04	mg/kg	06.11.19 20.59		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091980

Date Prep: 06.11.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.12.19 00.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.12.19 00.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.12.19 00.20	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.12.19 00.20	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.12.19 00.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	06.12.19 00.20	
o-Terphenyl	84-15-1	105	%	70-135	06.12.19 00.20	



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH37A**
Lab Sample Id: 627200-006

Matrix: Soil
Date Collected: 06.06.19 15.15

Date Received: 06.11.19 11.20
Sample Depth: 15.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3092067

Date Prep: 06.12.19 16.24

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.12.19 05.59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.12.19 05.59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.12.19 05.59	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.12.19 05.59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.12.19 05.59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.12.19 05.59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.12.19 05.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.12.19 05.59		
4-Bromofluorobenzene	460-00-4	124	%	70-130	06.12.19 05.59		



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH38**
Lab Sample Id: 627200-007

Matrix: Soil
Date Collected: 06.06.19 16.55

Date Received: 06.11.19 11.20
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091948

Date Prep: 06.11.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7370	49.9	mg/kg	06.11.19 21.06		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091980

Date Prep: 06.11.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.12.19 00.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	402	15.0	mg/kg	06.12.19 00.59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	126	15.0	mg/kg	06.12.19 00.59		1
Total TPH	PHC635	528	15.0	mg/kg	06.12.19 00.59		1
Total GRO-DRO	PHC628	402	15.0	mg/kg	06.12.19 00.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.12.19 00.59	
o-Terphenyl	84-15-1	102	%	70-135	06.12.19 00.59	



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH38**
Lab Sample Id: 627200-007

Matrix: Soil
Date Collected: 06.06.19 16.55

Date Received: 06.11.19 11.20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3092067

Date Prep: 06.12.19 16.24

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.12.19 06.18	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.12.19 06.18	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.12.19 06.18	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.12.19 06.18	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.12.19 06.18	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.12.19 06.18	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.12.19 06.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	123	%	70-130	06.12.19 06.18		
1,4-Difluorobenzene	540-36-3	93	%	70-130	06.12.19 06.18		



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH38A**
Lab Sample Id: 627200-008

Matrix: Soil
Date Collected: 06.06.19 17.10

Date Received: 06.11.19 11.20
Sample Depth: 4.0 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091953

Date Prep: 06.11.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2270	25.0	mg/kg	06.11.19 17.53		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091980

Date Prep: 06.11.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.12.19 01.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	637	15.0	mg/kg	06.12.19 01.18		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	167	15.0	mg/kg	06.12.19 01.18		1
Total TPH	PHC635	804	15.0	mg/kg	06.12.19 01.18		1
Total GRO-DRO	PHC628	637	15.0	mg/kg	06.12.19 01.18		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.12.19 01.18	
o-Terphenyl	84-15-1	105	%	70-135	06.12.19 01.18	



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH38A**
Lab Sample Id: 627200-008

Matrix: Soil
Date Collected: 06.06.19 17.10

Date Received: 06.11.19 11.20
Sample Depth: 4.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3092067

Date Prep: 06.12.19 16.24

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.12.19 06.37	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.12.19 06.37	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.12.19 06.37	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.12.19 06.37	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.12.19 06.37	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.12.19 06.37	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.12.19 06.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.12.19 06.37		
4-Bromofluorobenzene	460-00-4	120	%	70-130	06.12.19 06.37		



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH22B**
Lab Sample Id: 627200-009

Matrix: Soil
Date Collected: 06.06.19 17.55

Date Received: 06.11.19 11.20
Sample Depth: 4.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091953

Date Prep: 06.11.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7030	50.4	mg/kg	06.11.19 17.58		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091980

Date Prep: 06.11.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.12.19 01.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	20.6	15.0	mg/kg	06.12.19 01.37		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.12.19 01.37	U	1
Total TPH	PHC635	20.6	15.0	mg/kg	06.12.19 01.37		1
Total GRO-DRO	PHC628	20.6	15.0	mg/kg	06.12.19 01.37		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.12.19 01.37	
o-Terphenyl	84-15-1	105	%	70-135	06.12.19 01.37	



Certificate of Analytical Results 627200



LT Environmental, Inc., Arvada, CO

JRU 138 @ JRU 19

Sample Id: **PH22B**
Lab Sample Id: 627200-009

Matrix: Soil
Date Collected: 06.06.19 17.55

Date Received: 06.11.19 11.20
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3092067

Date Prep: 06.12.19 16.24

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.12.19 06.56	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.12.19 06.56	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.12.19 06.56	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.12.19 06.56	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.12.19 06.56	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.12.19 06.56	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.12.19 06.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.12.19 06.56		
4-Bromofluorobenzene	460-00-4	112	%	70-130	06.12.19 06.56		

- 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 627200

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: Chloride by EPA 300

Seq Number: 3091948

MB Sample Id: 7679658-1-BLK

Matrix: Solid

LCS Sample Id: 7679658-1-BKS

Prep Method: E300P

Date Prep: 06.11.19

LCSD Sample Id: 7679658-1-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	230	92	230	92	90-110	0	20	mg/kg	06.11.19 17:03	

Analytical Method: Chloride by EPA 300

Seq Number: 3091953

MB Sample Id: 7679670-1-BLK

Matrix: Solid

LCS Sample Id: 7679670-1-BKS

Prep Method: E300P

Date Prep: 06.11.19

LCSD Sample Id: 7679670-1-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	227	91	231	92	90-110	2	20	mg/kg	06.11.19 17:25	

Analytical Method: Chloride by EPA 300

Seq Number: 3091948

Parent Sample Id: 627197-001

Matrix: Soil

MS Sample Id: 627197-001 S

Prep Method: E300P

Date Prep: 06.11.19

MSD Sample Id: 627197-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.4	249	257	97	257	97	90-110	0	20	mg/kg	06.11.19 17:57	

Analytical Method: Chloride by EPA 300

Seq Number: 3091948

Parent Sample Id: 627199-002

Matrix: Soil

MS Sample Id: 627199-002 S

Prep Method: E300P

Date Prep: 06.11.19

MSD Sample Id: 627199-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	626	250	860	94	858	93	90-110	0	20	mg/kg	06.11.19 19:39	

Analytical Method: Chloride by EPA 300

Seq Number: 3091953

Parent Sample Id: 627272-001

Matrix: Soil

MS Sample Id: 627272-001 S

Prep Method: E300P

Date Prep: 06.11.19

MSD Sample Id: 627272-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.31	249	253	98	252	97	90-110	0	20	mg/kg	06.11.19 17:42	

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

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

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

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



QC Summary 627200

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: Chloride by EPA 300

Seq Number: 3091953

Parent Sample Id: 627274-004

Matrix: Soil

MS Sample Id: 627274-004 S

Prep Method: E300P

Date Prep: 06.11.19

MSD Sample Id: 627274-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	206	248	431	91	432	91	90-110	0	20	mg/kg	06.11.19 19:00	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091980

MB Sample Id: 7679721-1-BLK

Matrix: Solid

LCS Sample Id: 7679721-1-BKS

Prep Method: TX1005P

Date Prep: 06.11.19

LCSD Sample Id: 7679721-1-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	1090	109	1060	106	70-135	3	20	mg/kg	06.11.19 20:10	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	1020	102	70-135	2	20	mg/kg	06.11.19 20:10	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		123		125		70-135	%	06.11.19 20:10
o-Terphenyl	92		116		117		70-135	%	06.11.19 20:10

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091980

Parent Sample Id: 627199-001

Matrix: Soil

MS Sample Id: 627199-001 S

Prep Method: TX1005P

Date Prep: 06.11.19

MSD Sample Id: 627199-001 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)	<8.00	1000	1150	115	1130	113	70-135	2	20	mg/kg	06.11.19 21:08	
Diesel Range Organics (DRO)	<8.13	1000	1130	113	1120	112	70-135	1	20	mg/kg	06.11.19 21:08	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		127		70-135	%	06.11.19 21:08
o-Terphenyl	120		122		70-135	%	06.11.19 21:08

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

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

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 627200

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091986

MB Sample Id: 7679725-1-BLK

Matrix: Solid

LCS Sample Id: 7679725-1-BKS

Prep Method: SW5030B

Date Prep: 06.11.19

LCSD Sample Id: 7679725-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0921	92	0.102	102	70-130	10	35	mg/kg	06.11.19 17:07	
Toluene	<0.00199	0.0996	0.0911	91	0.0969	97	70-130	6	35	mg/kg	06.11.19 17:07	
Ethylbenzene	<0.00199	0.0996	0.0952	96	0.100	100	70-130	5	35	mg/kg	06.11.19 17:07	
m,p-Xylenes	<0.00398	0.199	0.190	95	0.199	100	70-130	5	35	mg/kg	06.11.19 17:07	
o-Xylene	<0.00199	0.0996	0.0946	95	0.0983	98	70-130	4	35	mg/kg	06.11.19 17:07	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	114		99		100		70-130			%	06.11.19 17:07	
4-Bromofluorobenzene	97		97		97		70-130			%	06.11.19 17:07	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3092067

MB Sample Id: 7679759-1-BLK

Matrix: Solid

LCS Sample Id: 7679759-1-BKS

Prep Method: SW5030B

Date Prep: 06.12.19

LCSD Sample Id: 7679759-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.0789	80	0.0892	89	70-130	12	35	mg/kg	06.12.19 02:51	
Toluene	<0.00198	0.0992	0.0818	82	0.0920	92	70-130	12	35	mg/kg	06.12.19 02:51	
Ethylbenzene	<0.00198	0.0992	0.0873	88	0.0972	97	70-130	11	35	mg/kg	06.12.19 02:51	
m,p-Xylenes	<0.00397	0.198	0.176	89	0.195	98	70-130	10	35	mg/kg	06.12.19 02:51	
o-Xylene	<0.00198	0.0992	0.0872	88	0.0970	97	70-130	11	35	mg/kg	06.12.19 02:51	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date	Flag		
1,4-Difluorobenzene	111		96		95		70-130	%	06.12.19 02:51			
4-Bromofluorobenzene	106		101		100		70-130	%	06.12.19 02:51			

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091986

Parent Sample Id: 627197-001

Matrix: Soil

MS Sample Id: 627197-001 S

Prep Method: SW5030B

Date Prep: 06.11.19

MSD Sample Id: 627197-001 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	0.123	123	0.101	101	70-130	20	35	mg/kg	06.11.19 17:45	
Toluene	<0.00200	0.100	0.123	123	0.0963	96	70-130	24	35	mg/kg	06.11.19 17:45	
Ethylbenzene	<0.00200	0.100	0.127	127	0.0993	99	70-130	24	35	mg/kg	06.11.19 17:45	
m,p-Xylenes	<0.00401	0.200	0.234	117	0.197	99	70-130	17	35	mg/kg	06.11.19 17:45	
o-Xylene	<0.00200	0.100	0.115	115	0.0977	98	70-130	16	35	mg/kg	06.11.19 17:45	
Surrogate			MS %Rec	MS Flag		MSD %Rec	MSD Flag	Limits		Units	Analysis Date	
1,4-Difluorobenzene			167	**		101		70-130		%	06.11.19 17:45	
4-Bromofluorobenzene			169	**		99		70-130		%	06.11.19 17:45	

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

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

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 627200

LT Environmental, Inc.

JRU 138 @ JRU 19

Analytical Method: BTEX by EPA 8021B

Seq Number: 3092067

Parent Sample Id: 627200-002

Matrix: Soil

MS Sample Id: 627200-002 S

Prep Method: SW5030B

Date Prep: 06.12.19

MSD Sample Id: 627200-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0795	80	0.0846	85	70-130	6	35	mg/kg	06.12.19 03:29	
Toluene	<0.00201	0.100	0.0896	90	0.0904	90	70-130	1	35	mg/kg	06.12.19 03:29	
Ethylbenzene	<0.00201	0.100	0.0947	95	0.0957	96	70-130	1	35	mg/kg	06.12.19 03:29	
m,p-Xylenes	<0.00402	0.201	0.194	97	0.193	97	70-130	1	35	mg/kg	06.12.19 03:29	
o-Xylene	<0.00201	0.100	0.0972	97	0.0958	96	70-130	1	35	mg/kg	06.12.19 03:29	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		95		70-130	%	06.12.19 03:29
4-Bromofluorobenzene	106		102		70-130	%	06.12.19 03:29

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:

62780

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:	Don Noir	Bill to: (if different)	Kyle Little
Company Name:	LIT Environmental	Company Name:	KTD
Address:	3300 North A Street	Address:	3104 E. Greene Street
City, State ZIP:	Midland TX 79705	City, State ZIP:	Carlsbad NM 88220
Phone:	432 704 5178	Email:	Amoir@litenv.com & abey@litenv.com

Project Name:	JRU 1380 JRU 19	Turn Around	☐ Routine ☐ Rush: same day
Project Number:	012918148	Rush:	same day
P.O. Number:	222-4480	Due Date:	
Sampler's Name:	Amoir		

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

Project Name:	JRU 1380 JRU 19	Turn Around	☐ Routine ☐ Rush: same day
Project Number:	012918148	Rush:	same day
P.O. Number:	222-4480	Due Date:	
Sampler's Name:	Amoir		

Temp Blank:	☒ Yes ☐ No	Wet Ice:	☒ Yes ☐ No
Temperature (°C):	0.00	Thermometer ID:	12
Received In tact:	☒ Yes ☐ No	Correction Factor:	0.0
Cooler Custody Seals:	☒ Yes ☐ No	Total Containers:	
Sample Custody Seals:	☒ Yes ☐ No		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	ANALYSIS REQUEST	Work Order Notes
PH35	S	6/4/19	1220	1.0'	2	TPH (EPA 8015) BTEX (EPA 8021) Chloride (EPA 300.0)	
PH35A	S		1255	16'	1		
PH36	S		1345	1.0'	1		
PH36A	S		1410	16'	1		
PH37	S		1500	4'	2		
PH37A	S		1515	15.5'	2		
PH38	S		1655	0.5'	1		
PH38A	S		1710	4.0'	2		
PH22B	S		1755	4.5'	1		

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Don Noir	Amoir	06-07-19 16:40	Don Noir	Amoir	06/11/19
					11:20



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/11/2019 11:20:00 AM

Work Order #: 627200

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

Brianna Teel

Date: 06/11/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/11/2019





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

Compliance · Engineering · Remediation

Identifier: PH01

Date:
9/26/2018

Project Name:
JRU 138 @ JRU 19

RP Number:
2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: B. Belill

Method: Trackhoe

Lat/Long:

Field Screening:

PID, Chloride test strips

Hole Diameter:

2.5'

Total Depth:

1.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(2.2) 192	0.0	N	PH01	0 0.5'		SM	Nodor brown/light tan calc. cl., fill
dry	(2.2) 192	0.0	N	PH01A	1 1.5'		SM	Nodor brown/red silt/sand
					2			
					3			deepest depth
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier: PH02

Date: 9/26/2018

Project Name:
JRU 138 @ JRU 19

RP Number:
2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: B. Belill

Method: Trackhoe

Lat/Long:

Field Screening:

PID, Chloride test strips

Hole Diameter: 2.5'

Total Depth: 1.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(1.4) <109	0.6	N	PH02	0	0.5'	SM	Nodor brown/light tan calc. cl., fill
dry	(1.6) 112	1.2	N	PH02A	1	1.5'	SM	Nodor brown/red silty sand
					2			
					3			deepest depth
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
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Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier: PH03

Date: 9/26/2018

Project Name:
JRU 138 @ JRU 19

RP Number:
2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: B. Belill

Method: Trackhoe

Lat/Long:

Field Screening:

PID, Chloride test strips

Hole Diameter: 2.5'

Total Depth: 1.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(5.0) 892	0.9	N	PH03	0 0.5'		SM	Nodor brown/light tan calc. cl., fill
dry	<112	0.8	N	PH03A	1 1.5'		SM	Nodor brown/red silty sand
deepest depth								
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier: PH04

Date:
9/26/2018

Project Name:
JRU 138 @ JRU 19

RP Number:
2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: B. Belill

Method: Trackhoe

Lat/Long:

Field Screening:

PID, Chloride test strips

Hole Diameter:
2.5'

Total Depth:
1.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(6.0) 1268	1.4	H	PH04	0 0.5'		SM	Nodor brown/light tan calc. cl., fill
dry	<112	1.1	N	PH040	1 1.5'		SM	Nodor brown/red silty sand
deepest depth								



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Identifier: PH05

Date: 9/26/2018

Project Name:
JRU 138 @ JRU 19

RP Number:
2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: B. Belill

Method: Trackhoe

Lat/Long:

Field Screening:

PID, Chloride test strips

Hole Diameter: 2.5'

Total Depth: 1.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(7.0) 1780	6.2	H	PH05	0 0.5'		SM	Nodor brown/light tan caliche, fill
dry	(1.8) 136	1.5	N	PH05A	1 1.5'		SM	Nodor brown/red silty sand
deepest depth								



LT Environmental, Inc.
508 West Stevens Street
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Compliance · Engineering · Remediation

Identifier:

PH08

Date:

9/26/2018

Project Name:

JRU 138 @ JRU 19

RP Number:

2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: *B. Bell*

Method: Trackhoe

Lat/Long:

Field Screening:

PID, Chloride test strips

Hole Diameter:

2.5'

Total Depth:

1.5 ~~ft~~

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
<i>dry</i>	(2.0) 164	80.2	<i>N</i>	<i>PH08</i>	0 0.5'		<i>SM/</i>	<i>dark</i> <i>light brown/tan caliche - fill</i>
<i>dry</i>	(2.0) 164	5.2	<i>N</i>	<i>PH08A</i>	1 1.5'		<i>SM</i>	<i>under light brown/red s./ty sand</i>
					2			<i>deepest depth</i>
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

PH09

Date:

9/26/2018

Project Name:

JRU 138 @ JRU 19

RP Number:

2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: *B. Bell*

Method: Trackhoe

Lat/Long:

Field Screening:

PID, Chloride test strips

Hole Diameter:

2.5'

Total Depth:

1.5 ~~ft~~

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
<i>dry</i>	(2.4) 224	39.4	<i>N</i>	<i>PH09</i>	0			
					0.5'		<i>SM/ calc</i>	<i>dark light brown/tan caliche - fill</i>
<i>dry</i>	(2.4) 224	3.5	<i>N</i>	<i>PH09</i>	1			
					1.5'		<i>SM</i>	<i>no color light brown/red s./ty sand</i>
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

deepest depth



LT Environmental, Inc.
Environmental Solutions



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

Compliance · Engineering · Remediation

Identifier:
PH10

Date:
9/27/2014

Project Name:
JRU 138 @ JRU 19

RP Number:
2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Lat Long:

Field Screening:

PID, Chloride test strips

Logged By: B. Belill

Method: Trackhoe

Hole Diameter:
2.5"

Total Depth:
1.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(1.8) 136	2.8	N	PH10	0	0.5'	SM	red/brown, silty sand N color
dry	(2.0) 164	1.9	N	PH10	1	1.5'	SM	SAA
					2			deepest depth
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.



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

Compliance · Engineering · Remediation

Identifier: PH11

Date:
9/27/2018Project Name:
JRU 138 @ JRU 19RP Number:
2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By: B. Belill

Method: Trackhoe

PID, Chloride test strips

Hole Diameter:
2.5'Total Depth:
1.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(4.4) 704	26.2	Y	PH11	0 0.5'		sm caliche	brown/dark brown + caliche fill nodules
dry	(3.0) 344	7.4	N	PH11A	1 1.5'		sm	red/brown, silty sand nodules
					2			
					3			deepest depth
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

PH/12

Date:

9/27/2018

Project Name:

JRU 138 @ JRU 19

RP Number:

2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: B. Belill

Method: Trackhoe

Lat/Long:

Field Screening:

PID, Chloride test strips

Hole Diameter:

2.5'

Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry (2.6)	260	4.0	Y/	PH/12	0	OS'	SM caliche	light brown/grey caliche - fill
dry (1.6)	112	4.1	N	PH/12A	1	1.5'	SM	red/brown silty sand
					2			deepest depth
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
A Division of LTI



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

Compliance · Engineering · Remediation

Identifier:
PH13

Date:
9/27/2014

Project Name:
JRU 138 @ JRU 19

RP Number:
2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Lat Long:

Field Screening:

PID, Chloride test strips

Logged By: B. Belill

Method: Trackhoe

Hole Diameter:
2.5"

Total Depth:
1.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(0.8) 136	3.0	N	PH13	0.5'		SM	red/brown, silty sand N color
dry	(1.2) 164	4.7	N	PH13A	1.5'		SM	SAA
					2			deepest depth
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.



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

Compliance · Engineering · Remediation

Identifier: PH14

Date:
9/27/2018Project Name:
JRU 138 @ JRU 19RP Number:
2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By: B. Belill

Method: Trackhoe

PID, Chloride test strips

Hole Diameter:
2.5'Total Depth:
1.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(9.2) >2564	4.5	Y	PH14	0 0.5'		sm caliche	brown/dark brown + caliche fill nodules
dry	(2.2) 192	5.2	N	PH140	1 1.5'		sm	red/brown, silty sand nodules
deepest depth								
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:
PH15

Date:
10/1/2018

Project Name:
JRU 138 @ JRU 19

RP Number:
2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: B. Belill

Method: Trackhoe

Lat/Long:

Field Screening:

PID, Chloride test strips

Hole Diameter:

2.5'

Total Depth:

2.8'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(2.2) 192	4.5	N	PH15	0 0.5'		SM	nodular brown/sand w/graded Bll
dry	(1.8) 136	3.8	N	PH15A	1 1.5'		SM	nodular brown/red silty sand
					2			
					3			deepest depth
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

15
18
24



LT Environmental, Inc.
Analytical Services



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

Compliance · Engineering · Remediation

Identifier:

PH16

Date:

10/1/2018

Project Name:

JRU 138 @ JRU 19

RP Number:

2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: B. Belill

Method: Trackhoe

Lat/Long:

Field Screening:

PID, Chloride test strips

Hole Diameter:

2.5'

Total Depth:

1.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(0.8) <112	0.2	N	PH16	0		sm	brown sand w/ calcite nodules
dry	(0.8) <112	2.6	N	PH16A	1		sm	brown, silty sand nodules
					2			deepest depth
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

16
29
25



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

Compliance · Engineering · Remediation

Identifier: PH17

Date: 10/1/2018

Project Name:
JRU 138 @ JRU 19

RP Number:
2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

PID, Chloride test strips

Logged By: B. Belill

Method: Trackhoe

Hole Diameter:
2.5"

Total Depth: 15'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(1.2) <112	3.9	N	PH17	0	0.5'	SM	SAA, nodular
dry	(1.2) <112	6.1	N	PH17A	1	1.5'	SM	SAA, nodular
					2			deepest depth
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

PH19

Date:

10/1/2018

Project Name:

JRU 138 @ JRU 19

RP Number:

2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: B. Belill

Method: Trackhoe

Lat/Long:

Field Screening:

PID, Chloride test strips

Hole Diameter:

2.5'

Total Depth:

1.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Jay	(1.0) <112	3.7	N	PH19	0			
					0.5'		sm	light brown/caliche - L.P. - 1/2 bits
					1			red silty sand
dy	(0.8) <112	4.6	N	PH19A	1.5'		sm	SAA N of bar
					2			
					3			deepest depth
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:
PH18

Date:
10/1/2018

Project Name:
JRU 138 @ JRU 19

RP Number:
2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: B. Belill

Method: Trackhoe

Lat/Long:

Field Screening:

PID, Chloride test strips

Hole Diameter:

2.5'

Total Depth:

2.8'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(U.S.) <112	2.5	N	PH18	0		SM	nodular brown/sand w/graded Bll
					0.5'			
dry	(U.S.) <112	3.9	N	PH18A	1		SM	nodular brown/red silty sand
					1.5'			
					2			
					3			deepest depth
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

15
18
24



LT Environmental, Inc.
Analytical Services



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

Compliance · Engineering · Remediation

Identifier:

PH23

Date:

10/1/2018

Project Name:

JRU 138 @ JRU 19

RP Number:

2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: B. Belill

Method: Trackhoe

Lat/Long:

Field Screening:

PID, Chloride test strips

Hole Diameter:

2.5'

Total Depth:

1.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(7.2) 1908	4.9	N	PH23	0		sm	brown sand w/ calcite nodules
dry	(4.0) 588	3.2	N	PH23A	1		sm	brown, silty sand nodules
					1.5'			
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

deepest depth

16
23
25



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

Compliance · Engineering · Remediation

Identifier:
PH20

Date:
10/1/2018

Project Name:
JRU 138 @ JRU 19

RP Number:
2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

PID, Chloride test strips

Logged By: B. Belill

Hole Diameter:
2.5"

Method: Trackhoe

Total Depth: 15'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(2.2) <112	5.4	N	PH20	0.5'		SM	SAA, nodular
dry	(1.8) <112	4.5	N	PH20A	1.5'		SM	SAA, nodular
					2			deepest depth
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

PH21

Date:

10/1/2018

Project Name:

JRU 138 @ JRU 19

RP Number:

2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: B. Belill

Method: Trackhoe

Lat/Long:

Field Screening:

PID, Chloride test strips

Hole Diameter:

2.5'

Total Depth:

1.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Jay	(4.0) 2780	90.4	N	PH21	0 0.5'		SM	light brown/caliche - L.P. - 1/2 bits
dy	(2.2) 1116	9.6	N	PH21A	1 1.5'		SM	red silty sand SAA N of bar
					2			deeper depth
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

PH22

Date:

10/1/2018

Project Name:

JRU 138 @ JRU 19

RP Number:

2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: B. Belill

Method: Trackhoe

Lat/Long:

Field Screening:

PID, Chloride test strips

Hole Diameter:

2.5'

Total Depth:

4.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(3.2) [↑] 1828	268	Y	PH22	0	0.5'	Soil	odor, brown silty sand, traces of caliche
M	(2.8) [↑] 1572	207.3	Y		1	(2)	Soil	odor, brown silty sand
dry	(5.8) [↑] 5876	168.4	Y	PH22 PH22B	3	(4)	caliche	odor light brown/tan caliche
deepest depth								



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Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:
PH24

Date:
10/1/2018

Project Name:
JRU 138 @ JRU 19

RP Number:
2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: B. Belill

Method: Trackhoe

Lat/Long:

Field Screening:

PID, Chloride test strips

Hole Diameter:

2.5'

Total Depth:

2.8'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(C.4) <112	4.9	N	PH24	0 0.5'		SM	nodular brown/sand w/graded Bll
dry	(C.2) <112	5.0	N	PH24A	1 1.5'		SM	nodular brown/red silty sand
					2			
					3			deepest depth
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

15
18
24



LT Environmental, Inc.
Making Clean



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

Compliance · Engineering · Remediation

Identifier:

PH25

Date:

10/1/2018

Project Name:

JRU 138 @ JRU 19

RP Number:

2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: B. Belill

Method: Trackhoe

Lat/Long:

Field Screening:

PID, Chloride test strips

Hole Diameter:

2.5'

Total Depth:

1.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(3.0) 344	4.7	N	PH25	0		sm	brown sand w/ calcite nodules
dry	(1.6) 112	3.9	N	PH25A	0.5'		sm	brown, silty sand nodules
					1			
					1.5'			
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

deepest depth

16
29
25



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

Compliance · Engineering · Remediation

Identifier:

PH26

Date:

5/16/19

Project Name:

JRU 138 @ JRU 19

RP Number:

2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

32.345863, -103.831829

Field Screening:

PD + Cl⁻ Test Strips

Logged By: A Byers

Method: Track hoe

Hole Diameter:

2.5' x 5'

Total Depth:

4.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	172.8	15.1	NO	PH26	0			
D		14.7			0.5'	0.5'	SP-SM	brown, poorly graded silt sand(c.), no plasticity
					1			
					1.5'	1.5'	SP-SM	"
m					2			
		4.6			3'	3.0'	SC	brown, poorly graded clayey sand(c.), low plasticity
D					4			
		8.1		PH26A	4.5'	caliche		light tan, well graded, soft
					5			TOT DEPTH
					6			
					7			
					8			
					9			
					10			
					11			
					12			

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<172.8	<50 16.2	NO	PH27	0	0.5	SM	poorly graded, brown silt sand (m.), no plasticity
M		17.3			1			
					2	2'	SM	poorly graded, brown silt sand (m.), low plasticity
					3			
D		14.8		PH27A	4	4.5	CLAY	tan-grey, well graded, sandy (m-c)
TOT DEPTH								
0.5								
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								



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

Compliance · Engineering · Remediation

Identifier:

PH 28

Date:

3/16/19

Project Name:

JRU 138 @ JRU 19

RP Number:

2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

32.346056, -103.831819

Field Screening:

PID & CI - strips

Logged By:

A Byers

Method: track hoe

Hole Diameter:

2.5' x 5'

Total Depth:

4.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	472.8	45		PH 28	0	0.5'	SM	poorly graded, brown silt sand (m.) no plasticity
M					1			
					2	2.0'	SM	poorly graded brown silt sand (m.) low plasticity
					3			
					4			
D				PH 28A	4.5'			caliche tan-grey well graded sandy (m.c.) TOT DEPTH
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

PH29

Date:

5/20/19

Project Name:

JRU 138 @ JRU 19

RP Number:

2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

32.34 5635, -108.831924

Field Screening:

PID / CI- test strips

Logged By: A Byers

Method: track hoe

Hole Diameter:

2.5' x 5'

Total Depth:

4.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<172.8	0.3	NO	PH29	0	0.5'		poorly graded silt sand (c.), no plasticity
M		0.1			1	1.0'		"
M		0.2			2	2.0'		poorly graded silt sand (c.), low plasticity
M		0.2			3	3.0'		"
M		0.1		PH29A	4	4.5'		"
					5			TOT DEPTH
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

PH30

Date:

5/20/19

Project Name:

JRU 138 @ JRU 19

RP Number:

22P-4980

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: A Byers

Method: Track Hoe

Lat/Long:

32.345805, -108.832014

Field Screening:

PD & Cl⁻ test strips

Hole Diameter:

2.5' - 4.5'

Total Depth:

4.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	472.8	Ø	NO	PH30	0			
D					0.5'	0.5'	SM	poorly graded silty sand ^(c.) , no plasticity
D					1	1.0'	SM	brown
M					2	2.0'	SM	poorly graded clayey sand ^(m.) low plasticity, brown
D					3	3.0'	caliche	tan-white, sand-gravel size grains, soft
D					4	4.0'		"
D				PH30A	4.5'	4.5'	caliche	--- TOT DEPTH
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

PH31

Date:

5/20/19

Project Name:

JRU 138@JRU 19

RP Number:

2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

32.345789, 103.832220

Field Screening:

PID / Cl- test strips

Logged By: A Byers

Method: track hoe

Hole Diameter:

2.5' x 5'

Total Depth:

4.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	21728	0.7	NO	PH31	0			
		0.2			1	0.5'	SM	poorly graded, silt sand (c.), no
						1.0'	SM	" plasticity, brown
		0.5			2	2.0'	SM	"
		0.4			3	3.0'	SM	"
		0.3		PH31A	4	4.5'	SM	"
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

TOT DEPTH



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

Compliance · Engineering · Remediation

Identifier:

PH32

Date:

5/16/19

Project Name:

JRU 138 @ JRU 19

RP Number:

28P-4980

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

32.3416002, -108.881743

Field Screening:

PID / CI - Strips

Logged By:

A Byrns

Method: Track the

Hole Diameter:

2.5' x 5'

Total Depth:

4.5'

Comments:

Moisture Content	Chloride Vapor (ppm)	Chloride (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	43.1	472.8	N	PH32	0	0.5'	SM	poorly graded, <u>low</u> plasticity brown silt sand (n.)
M	5.6	472.8	N		1	2.0'	SM	
D	2.9	472.8	N	PH32A	2	4.5'	caliche	tan-white, silt - gravel size matrix grains
					5	TOT Depth		
					6			
					7			
					8			
					9			
					10			
					11			
					12			

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	<1785.6	435	Y	PH34	0	0.5'	sm	poorly graded brown silt sand (m-c.), " low plasticity
M	"	400	Y		1	1.0'	sm	
M	"	263	N		2	2'	sm	
M	785.6	144	N	PH34A	3	3.5'	sm	moist, well graded brown silt sand (m-c.) low plasticity
					4			poorly graded, brown silt sand (m-c.) low plasticity
								TOT DEPTH
								



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

Compliance · Engineering · Remediation

Identifier: PH35	Date: 6/4/19
Project Name: SRU 138 @ SRU 9	RP Number: 2RP-4980
Logged By: A Byers	Method: Track Hoe
Hole Diameter: 2.5' x 8'	Total Depth: 16'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long: 32.346560, -103.832159	Field Screening: PID / CI test strips
Comments:	

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	20000	12.2	N	PH35	0			
M		7.3			1	1'	sm	poorly graded, low plasticity brown silt sand (c.)
M		7.2			2	2'	sm	"
D		5.2			3	3'	SC	poorly graded, mod plasticity brown clayey sand (m-c.)
D		8.7			4	4'	caliche	white, well sorted, sandy
D		4.3			6	6'		inc. sorting w/ depth & color gradually changes to light pink
D		6.0			10	10'		
D		2.5			12	12'		



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

Compliance · Engineering · Remediation

Identifier: PH35	Date:
Project Name:	RP Number:
Logged By:	Method:
Hole Diameter:	Total Depth:

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:	Field Screening:
Comments:	

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	230000 48	4.8	N		0		caliche	
					14	14'		
					2			
D	8	5.5		PH35A	16	16'	PH35A	maroon, fine grained, well sorted compact mud or siltstone
							midstone	
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

PH36

Date:

6/4/19

Project Name:

JRU 138 @ JRU19

RP Number:

JRP-4980

Logged By:

A. Byrnes

Hole Diameter:

2.5' x 8'

Method:

Penetration Test

Total Depth:

16'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

32.346552, -103.831962

Field Screening:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	2000	20.1	NO	PH36	0			
M		12.3			1	1	SM	moist brown silt sand (c.), low plasticity poorly graded
M		6.1			2	2	SM	"
D		10.8			3	3	SC	moist brown clayey sand (n.-c.), med plasticity, poorly graded
D		12.4			4	4	caliche	grey-white, sandy-gravel size grains/matrix
D		14.0			5	5		inc sorting w/ depth compaction
D		14.5			6	6		& gradually changes color to light pink
D		14.5			7	7		
D		14.5			8	8		
D		14.5			9	9		
D		14.5			10	10		
D		14.5			11	11		
D		15.5			12	12'		



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508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:
PH36

Date:

Project Name:

RP Number:

Logged By:

Method:

Hole Diameter:

Total Depth:

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	5000	15.1	15.1		14'	14'		
D	Good	14.1	14.1	PH364	16'	16'	siltstone	maroon mud/silt stone, fine grained, well sorted, compact TOT DEPTH
					1			
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
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Compliance · Engineering · Remediation

Identifier:

PH37

Date:

6/4/19

Project Name:

JRU 138 @ JRU 19

RP Number:

2RP-4980

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

32.346404, -103.831717

Field Screening:

Logged By: A Byers

Method: Track Hole

Hole Diameter:

Total Depth:
15.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	42000	20.9	ND		0			
m		14.9			1	1'	Sm	poorly graded silt sand (m), moist, low plasticity brown
m		17.2			2	2'	Sm	"
D		24.6		PH37	3	3'	SC	poorly graded clayey sand (m-c.), mod plasticity brown
		21.7			4	4'	caliche	lt grey, sand-gravel size matrix/grains
		8.4			5			inc compactness & sorting of grains w/ depth
		7.4			6	6'		& gradually shifts to light pink color
		11.2			7			
		7.8		PH37A	8	8'		
					9			
					10	10'		
					11	11'		
					12	12'		
					13	13'		
					14	14'		
					15	15.5'		pink silt sand/silt stone interface

LT Environmental, Inc.



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

Compliance · Engineering · Remediation

Identifier:

PH39

Project Name:

JRU 138 @ JRU 19

Date:

4/4/19

RP Number:

2PP-4980

Logged By: *A Byers*

Hole Diameter:	
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2.5"

Method: Hand Auger

Total Depth:

4.0'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

$$32.346\bar{0}36, -103.832383$$

Field Screening:

PID / CI- test Strips

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<20,000	108.2	Y		0			
m		21.4	Y	PH328	0.5	1	sm	poorly graded silt sand (m.c.), no plasticity brown
m					1	1	sm	moist silt sand (m.-c.) poorly graded low plasticity brown
m		79.1	N		2	2	sm	"
m		40.3	N		3	3	sm	"
m		40.7	N	PH329A	4	4	sm	mod plasticity "
----- TOT DEPTH								
5								
6								
7								
8								
9								
10								
11								
12								



Western view of release area during delineation activities.

Project: 012918148	XTO Energy, Inc. James Ranch Unit #138 release at JRU 19 Battery	
September 26, 2018	Photographic Log	



View of processing equipment during delineation activities.

Project: 012918148	XTO Energy, Inc. James Ranch Unit #138 release at JRU 19 Battery	
May 31, 2019	Photographic Log	