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March 17, 2020

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

RE: Closure Request
James Ranch Unit 48 Battery
Remediation Permit Numbers 2RP-1142 and 2RP-2556
Eddy County, New Mexico

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request report detailing site assessment, soil sampling, and excavation activities at the James Ranch Unit (JRU) 48 Battery (Site) in Unit M, Section 12, Township 22 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment, soil sampling, and excavation activities was to address impacts to soil after two separate releases of crude oil and/or produced water at the Site.

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

RELEASE BACKGROUND

On April 20, 2012, a connection on the water discharge pump failed causing the release of 30 barrels (bbls) of produced water. A 2,300 square foot area inside the earthen storage tank containment berm was affected by the release. An additional 200 square foot area outside of the containment was affected by overspray. A vacuum truck was used to recover the free-standing fluid; approximately 10 bbls of produced water were recovered. The former operator reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on May 3, 2012, and was assigned Remediation Permit (RP) Number 2RP-1142 (Attachment 1).

On October 15, 2014, the water transfer pump failed to start due to blown control panel fuses and caused the release of 6 bbls of crude oil and 73 bbls of produced water. A 2,400 square foot area inside the earthen storage tank containment berm was affected by the release. A vacuum truck was used to recover the free-standing fluid; approximately 2 bbls of crude oil and 56 bbls of produced water were recovered. The former operator reported the release to the NMOCD on a Form C-141 on October 17, 2014, and was assigned Remediation Permit Number 2RP-2556 (Attachment 1).

Although the releases occurred while the facility was operated by the previous operator, XTO is the current operator and is committed to addressing any releases that remain unresolved. Since both releases affected the same area of the Site, excavation and soil sampling activities were completed to address and close both releases simultaneously. Based on the site assessment activities and results of the soil sampling events, XTO is requesting no further action for the release events.

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of 19.15.29.12 of the NMAC. Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is United States Geological Survey (USGS) well 322418103523201, located approximately 1.9 miles west of the Site. The water well has a depth to groundwater of 54.56 feet and a total depth of 77 feet bgs. Ground surface elevation at the water well location is 3,133 feet above mean sea level (AMSL), which is approximately 190 feet lower in elevation than the Site. The next closest water well with depth to water data is NMOSE well C03015, located approximately 2.6 miles southwest of the Site. The water well has a depth to groundwater of 262 feet and a total depth of 1,316 feet bgs. NMOSE well C03015 is located further from the Site but is at a more comparable elevation. Ground surface elevation at the water well location is 3,286 feet AMSL, which is approximately 37 feet lower in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is an intermittent stream located approximately 650 feet north-northwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a medium-potential karst area.

CLOSURE CRITERIA

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

- Benzene: 10 milligrams per kilogram (mg/kg);

- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg;
- TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg;
- Total petroleum hydrocarbons (TPH): 2,500 mg/kg; and
- Chloride: 20,000 mg/kg.

SITE ASSESSMENT, EXCAVATION, AND DELINEATION SOIL SAMPLING ACTIVITIES

During February 2018, LTE personnel inspected the Site to evaluate the release extent. Surficial hydrocarbon staining was observed in the release area. On February 6 and June 6, 2018, an LTE scientist collected eight preliminary soil samples (SS01 through SS08) in the release area to assess the lateral extent of impacted soil. The soil sample locations, depicted on Figure 2, were selected based on information provided on the initial Form C-141s and field observations. To eliminate the effects from weathering and natural degradation of contaminants at the ground surface, the soil samples were collected from each sample location from a depth of 0.5 feet bgs. On May 9, 2018, LTE personnel collected delineation soil sample SS01A from a depth of 1.8 feet bgs at the SS01 preliminary soil sample location, to assess the vertical extent of impacted soil.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX following United States Environmental Protection Agency (USEPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0. The preliminary soil sample locations are depicted on Figure 2.

Between January and July 2019, LTE personnel returned to the Site to oversee site assessment and excavation activities as indicated by visual observations, field screening activities, and laboratory analytical results for the preliminary soil samples.

Boreholes and potholes were advanced via hand-auger or backhoe at 9 locations within and around the release extent to further assess the lateral and vertical extent of soil impacts. Boreholes BH01 through BH03 were advanced to a depth of 4 feet bgs. Potholes PH01 through PH06 were advanced to a depths ranging from 10 feet to 20 feet bgs. Delineation soil samples were collected from each borehole and pothole from depths ranging from 1 foot 20 feet bgs. Soil from the boreholes and potholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach© chloride QuanTab© test strips, respectively. Field screening results and observations for each borehole and pothole were logged on lithologic/soil sampling logs, which are included in Attachment 2. The delineation soil sample locations are depicted on Figure 3. The delineation soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Midland, Texas.

Impacted soil was excavated from the release area as indicated by field screening activities and laboratory analytical results for the preliminary and delineation soil samples. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. Impacted soil was excavated to the maximum extent practicable based on the presence of active production equipment. Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. The excavation extent was sampled in February 2019. Composite soil samples SW01 through SW08 were collected from the sidewalls of the excavation from depths ranging from the ground surface to 4 feet bgs. Composite soil samples FS01 through FS05 were collected from the floor of the excavation from depths of 4 feet or 4.5 feet bgs. Further excavation activities were put on-hold pending abandonment of the Site. The JRU 48 well was scheduled to be plugged and abandoned (P&Ad) and all of the associated processing equipment and storage tanks were going to be removed from the Site.

During July 2019, upon completion of abandonment activities, LTE returned to the Site to oversee excavation of the remaining impacted soil. The excavation was completed to depths ranging from 2 feet to 18 feet bgs. Following removal of impacted soil, LTE collected 5-point composite soil samples from the sidewalls and floor of the final excavation extent. Composite soil samples SW09 through SW32 were collected from the sidewalls of the excavation from depths ranging from 0.5 feet to 18 feet bgs. Due to the 18-foot depth in the western half of the excavation, sidewall samples SW11 through SW32 were collected in 4.5-foot intervals. Composite soil samples FS06 through FS16 were collected from the floor of the excavation from depths ranging from 2 feet to 18 feet bgs. The excavation extent and excavation soil sample locations are depicted on Figure 4. The excavation soil samples were collected, handled, and analyzed as described above and submitted to Xenco Laboratories (Xenco) in Midland, Texas. Photographic documentation was conducted during the Site visit. Photographs are included in Attachment 3.

The excavation measured approximately 3,935 square feet in area with a depth of 2 feet to 18 feet bgs. A total of approximately 1,700 cubic yards of impacted soil were removed from the excavation. The impacted soil was transported and properly disposed of at the R360 Landfill located in Hobbs, New Mexico.

ANALYTICAL RESULTS

Laboratory analytical results indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in preliminary soil samples SS01A and SS02 through SS06. Laboratory analytical results indicated that BTEX and/or TPH and GRO/DRO concentrations exceeded the Closure Criteria in preliminary soil samples SS01, SS07, and SS08,

collected from a depth of 0.5 feet bgs. Based on the preliminary soil sample analytical results, delineation and excavation of impacted soil was conducted.

Laboratory analytical results for the delineation soil samples, collected from boreholes BH01 through BH03 and potholes PH01, PH03, PH05, and PH06 indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results for delineation soil sample PH02 collected at 0.5 feet bgs, and PH04 collected at 6 feet bgs indicated that TPH and/or GRO/DRO concentrations exceeded the Closure Criteria. Subsequent delineation soil samples PH02A, PH02B, and PH04A were compliant with the Closure Criteria. Based on the delineation soil sample analytical results, the lateral and vertical extent of impacted soil was successfully defined, and the impacted soil was excavated.

Laboratory analytical results for initial excavation soil samples SW03, SW05 through SW08, and FS01 through FS05, indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results for initial excavation soil samples SW01, SW02, and SW04 indicated that that TPH and/or GRO/DRO exceeded the Closure Criteria. Additional soil was removed from the excavation upon completion of Site abandonment activities. Laboratory analytical results for excavation soil samples SW09 through SW32 and FS06 through FS16, collected from the final excavation extent, indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Additionally, chloride concentrations were below 600 mg/kg in soil samples SW09, SW10, SW14, SW18, SW19, SW32, FS06 through FS09, and FS13 that were collected above 4 feet bgs, per NMAC 19.15.29.13.D (1) requirements for the top 4 feet of areas that will be reclaimed following remediation.

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

CLOSURE REQUEST

Site assessment and soil sampling activities were completed to delineate the lateral and vertical extent of impacted soil resulting from historical releases of crude oil and produced water at the Site. Based on laboratory analytical results for the delineation soil samples, the extent of impacted soil was defined, and excavation activities were completed. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Based on the excavation and delineation soil sample analytical results, no further remediation was required.

Initial response efforts, natural attenuation, and excavation of impacted soil have mitigated impacts at this Site. XTO requests no further action for RP Numbers 2RP-1142 and 2RP-2556. XTO backfilled the excavation with material purchased locally and recontoured the Site to match pre-

existing site conditions. An updated NMOCD Form C-141 for each release is included in Attachment 1.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Aimee Cole
Project Environmental Scientist

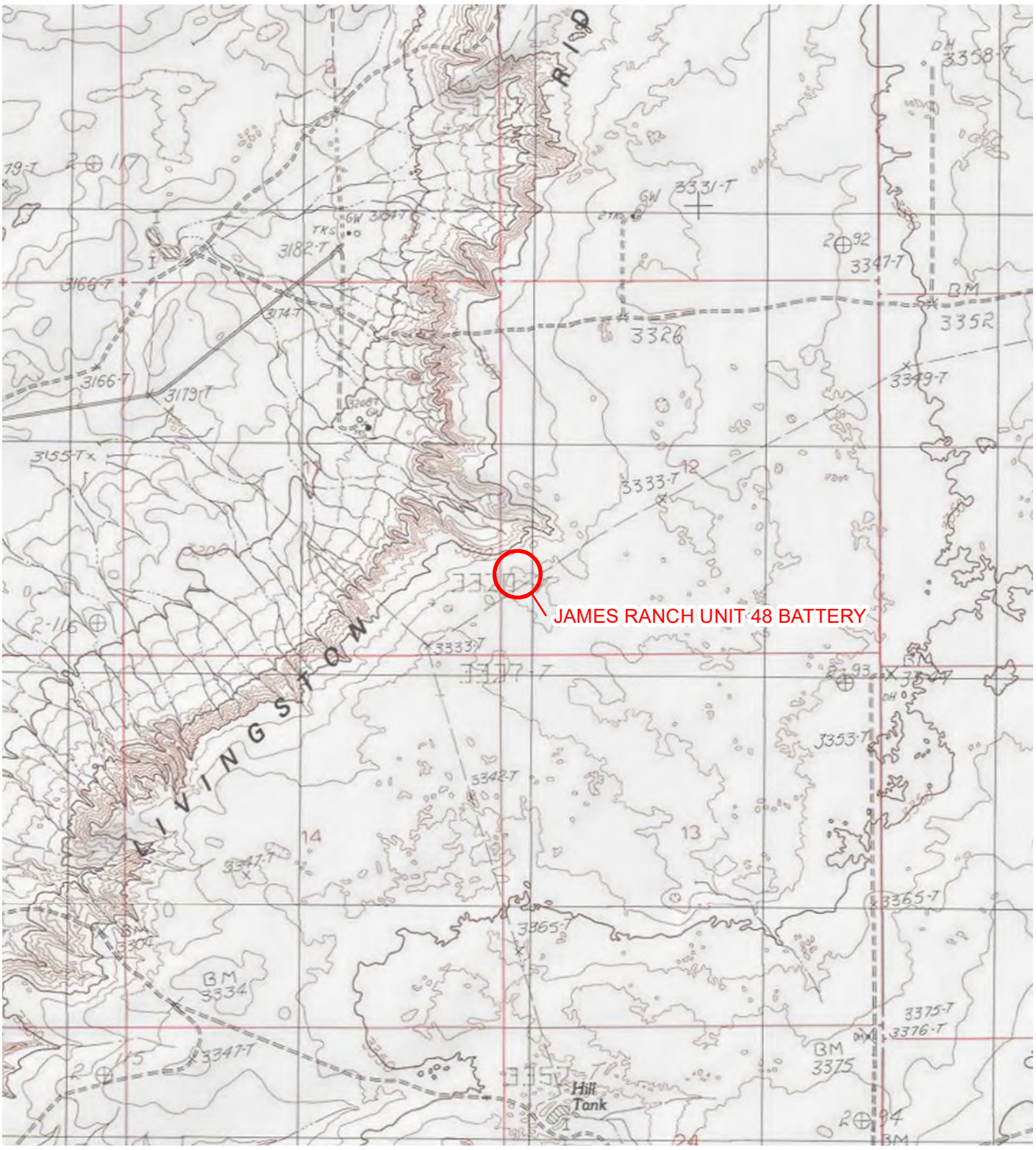
Ashley L. Ager, P.G.
Senior Geologist

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

Attachments:

Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Delineation Soil Sample Locations
Figure 4	Excavation Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Initial/Final NMOCD Form C-141 (2RP-1142 and 2RP-2556)
Attachment 2	Lithologic / Soil Sample Logs
Attachment 3	Photographic Log
Attachment 4	Laboratory Analytical Reports

FIGURES



LEGEND

SITE LOCATION

IMAGE COURTESY OF ESRI/USGS

0 2,000 4,000

Feet

N

NEW MEXICO

NOTE: REMEDIATION PERMIT NUMBERS 2RP-1142 AND 2RP-2556

FIGURE 1
SITE LOCATION MAP
JAMES RANCH UNIT 48 BATTERY
UNIT M SEC 12 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

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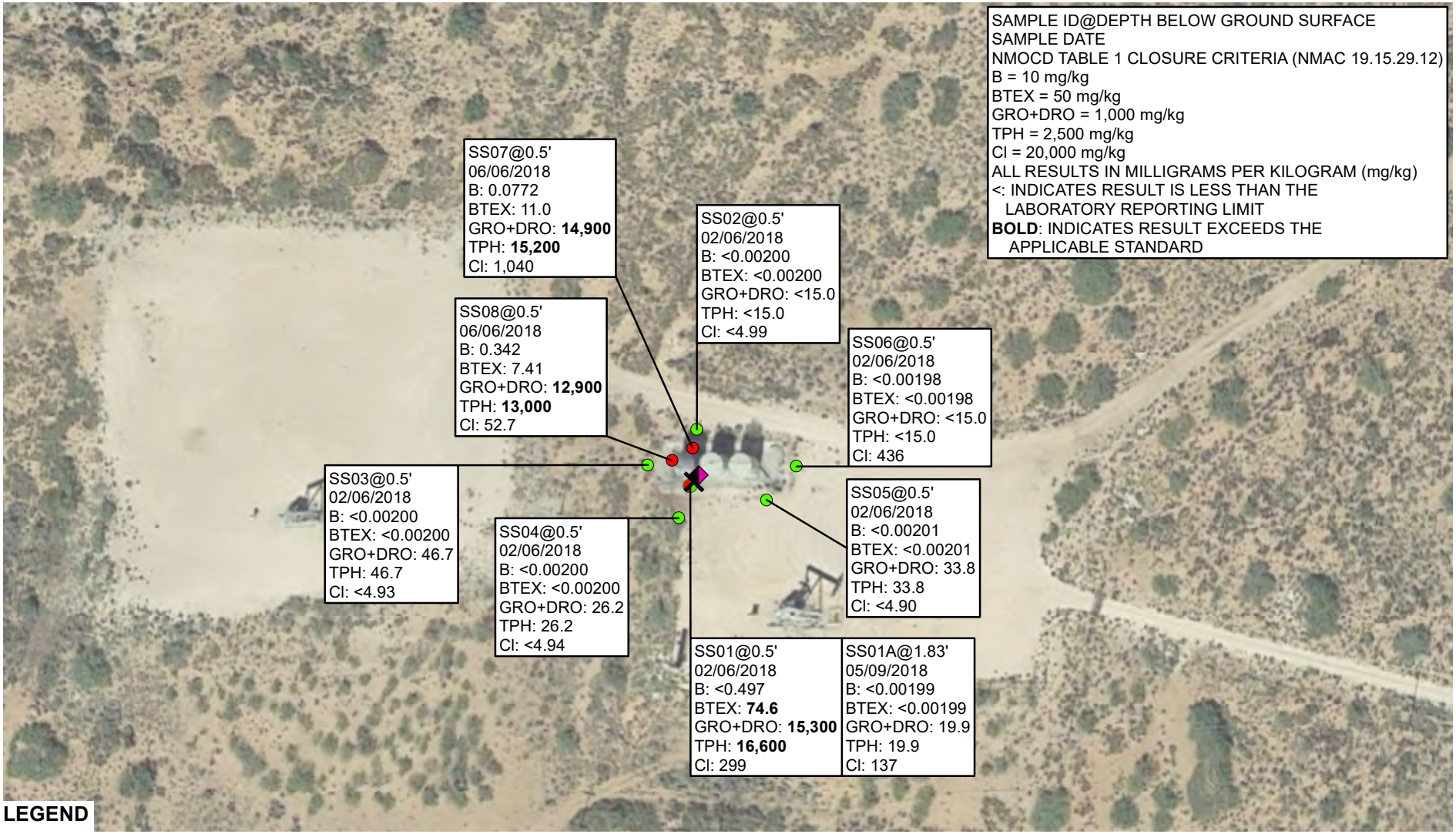


LEGEND

- RELEASE LOCATION
- PUMP LOCATION
- PRELIMINARY SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS
- PRELIMINARY SOIL SAMPLE WITH CONCENTRATIONS PREVIOUSLY EXCEEDING APPLICABLE CLOSURE CRITERIA
- PRELIMINARY SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS

IMAGE COURTESY OF GOOGLE EARTH 2017

0 100 200
Feet

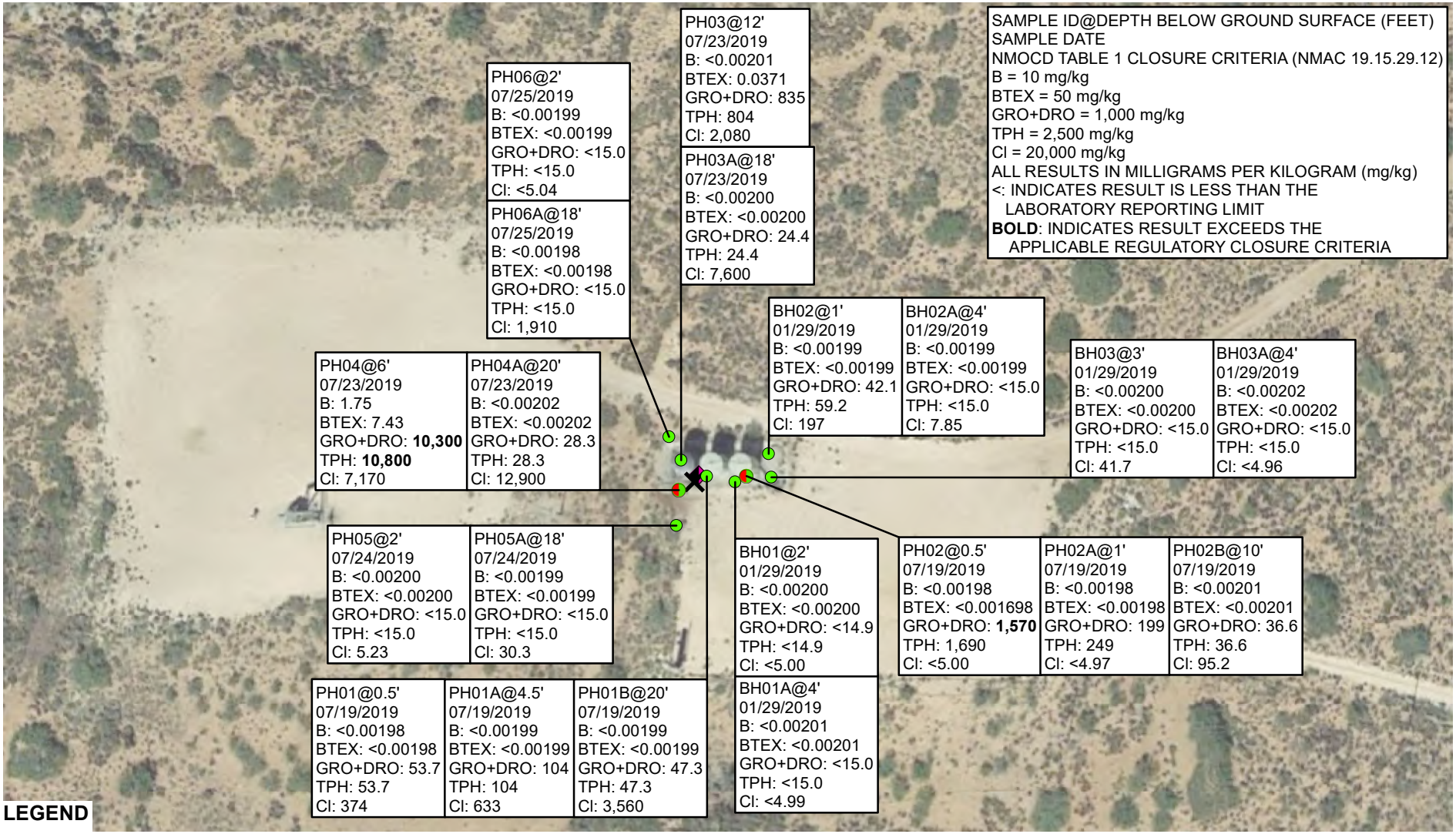
N

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

NOTE: REMEDIATION PERMIT NUMBERS 2RP-1142 AND 2RP-2556

FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT 48 BATTERY
UNIT M SEC 12 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918032_JRU #48_TANK BATTERY\012918032_FIG02_PRELIMINARY SS_2018.mxd



LEGEND

- RELEASE LOCATION
- PUMP LOCATION
- DELINEATION SOIL SAMPLE WITH CONCENTRATIONS PREVIOUSLY EXCEEDING APPLICABLE CLOSURE CRITERIA
- DELINEATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

IMAGE COURTESY OF GOOGLE EARTH 2017

0 100 200 Feet

N

B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO: GASOLINE RANGE ORGANICS
DRO: DIESEL RANGE ORGANICS
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBERS 2RP-1142 AND 2RP-2556

FIGURE 3
DELINEATION SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT 48 BATTERY
UNIT M SEC 12 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

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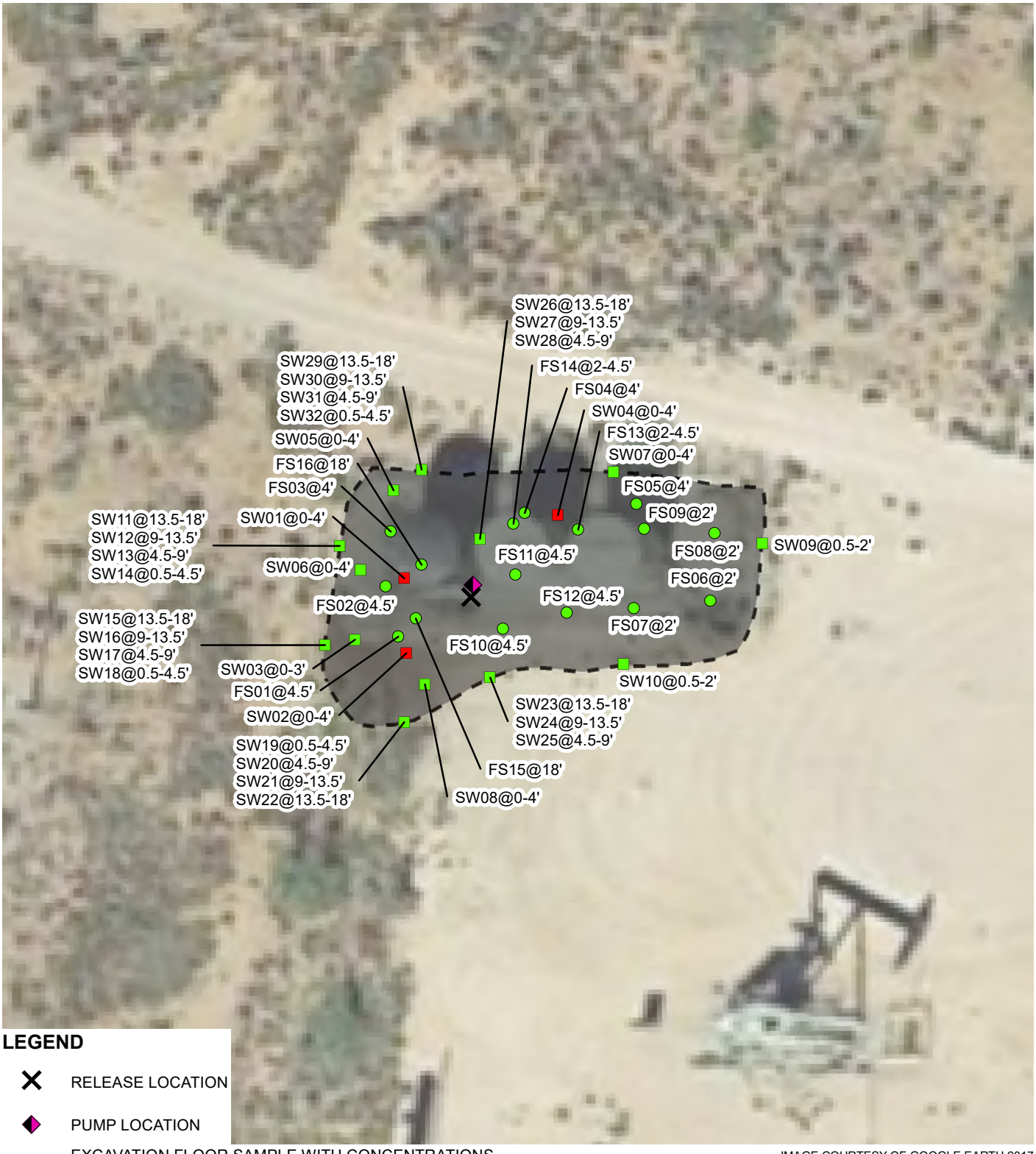

LEGEND

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

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
NOTE: REMEDIATION PERMIT NUMBERS 2RP-1142 AND 2RP-2556

IMAGE COURTESY OF GOOGLE EARTH 2017

0 30 60
Feet

N

FIGURE 4
EXCAVATION SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT 48 BATTERY
UNIT M SEC 12 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918032_JRU #48_TANK BATTERY\012918032_FIG04_EXCAVATION_1142_2556.mxd

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS

JAMES RANCH UNIT 48 BATTERY
REMEDIATION PERMIT NUMBER 2RP-1142 AND 2RP-2556
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS01	0.5	02/06/2018	<0.497	21.9	6.56	46.1	**74.6**	3,390	11,900	1,270	**15,300**	**16,600**	299
SS01A	1.83	05/09/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	19.9	<15.0	19.9	19.9	137
SS02	0.5	02/06/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99
SS03	0.5	02/06/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	47	<15.0	47	47	<4.93
SS04	0.5	02/06/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	26.2	<15.0	26.2	26.2	<4.94
SS05	0.5	02/06/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	33.8	<15.0	33.8	33.8	<4.90
SS06	0.5	02/06/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	436
SS07	0.5	06/06/2018	0.0772	2.24	2.04	6.66	11	1,640	13,300	287	**14,900**	**15,200**	1,040
SS08	0.5	06/06/2018	0.342	0.285	2.24	4.55	7.41	1,370	11,500	162	**12,900**	**13,000**	53
BH01	2	01/29/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	<5.00
BH01A	4	01/29/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99
BH02	1	01/29/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	42.1	17.1	42.1	59.2	197
BH02A	4	01/29/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	7.85
BH03	3	01/29/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	41.7
BH03A	4	01/29/2019	<0.00202	<0.00200	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	<4.96
PH01	0.5	07/19/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	53.7	<15.0	53.7	53.7	374
PH01A	4.5	07/19/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	104	<15.0	104	104	633
PH01B	20	07/19/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	47.3	<15.0	47.3	47.3	3,560
PH02	0.5	07/19/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	1,570	122	**1,570**	1,690	<5.00
PH02A	1	07/19/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	199	49.8	199	249	<4.97
PH02B	10	07/19/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	36.6	<14.9	36.6	36.6	95.2
PH03	12	07/23/2019	<0.00201	<0.00201	<0.00201	0.0371	0.0371	107	697	30.7	835	804	2,080
PH03A	18	07/23/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	24.4	<14.9	24.4	24.4	7,600
PH04	6	07/23/2019	1.75	0.386	0.491	4.80	7.43	2,590	7,680	535	**10,300**	**10,800**	7,170
PH04A	20	07/23/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	28.3	<15.0	28.3	28.3	12,900
PH05	2	07/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	5.23
PH05A	18	07/24/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	30.3
PH06	2	07/25/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.04
PH06A	18	07/25/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	1,910
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**

TABLE 1
SOIL ANALYTICAL RESULTS

JAMES RANCH UNIT 48 BATTERY
REMEDIATION PERMIT NUMBER 2RP-1142 AND 2RP-2556
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SW01	0-4	02/07/2019	0.0268	3.34	0.206	6.87	10.4	1,160	8,740	1,420	**10,400**	**11,800**	235
SW02	0-4	02/08/2019	<0.00200	<0.00200	0.00342	0.0115	0.0149	24.5	1,070	202	**1,090**	1,300	1,040
SW03	0-3	02/07/2019	<0.00200	0.00483	<0.00200	0.00951	0.0143	<14.9	18.1	<14.9	18.1	18.1	742
SW04	0-4	02/07/2019	<0.00199	0.022	0.00989	0.0653	0.0972	79.1	1,790	408	**1,870**	2,280	122
SW05	0-4	02/07/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	254
SW06	0-4	02/07/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	314
SW07	0-4	02/07/2019	<.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	44.7	<15.0	44.7	44.7	333
SW08	0-4	02/15/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	85.2	20.9	85.2	106	1,630
SW09	0.5-2	07/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	288*
SW10	0.5-2	07/25/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<14.9	73.2	<14.9	73.2	73.2	114*
SW11	13.5-18	07/26/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	3,770
SW12	9-13.5	07/26/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	3,430
SW13	4.5-9	07/26/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	6.65
SW14	0.5-4.5	07/26/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<14.9	<14.9	<14.9	<14.9	<14.9	6.67*
SW15	13.5-18	07/26/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	8,120
SW16	9-13.5	07/26/2019	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	<15.0	<15.0	<15.0	<15.0	<15.0	1,250
SW17	4.5-9	07/26/2019	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	<15.0	<15.0	<15.0	<15.0	<15.0	504
SW18	0.5-4.5	07/26/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.95*
SW19	0.5-4.5	07/26/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99*
SW20	4.5-9	07/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,210
SW21	9-13.5	07/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,700
SW22	13.5-18	07/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	29.2	<15.0	29.2	29.2	9,220
SW23	13.5-18	07/30/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	8,020
SW24	9-13.5	07/30/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	5,440
SW25	4.5-9	07/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	17.2	<15.0	17.2	17.2	5,370
SW26	13.5-18	07/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	6,990
SW27	9-13.5	07/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	3,700
SW28	4.5-9	07/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,650
SW29	13.5-18	07/30/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	4,270
SW30	9-13.5	07/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	20.8	<15.0	20.8	20.8	4,780
SW31	4.5-9	07/30/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	64.5	<15.0	64.5	64.5	488
SW32	0.5-4.5	07/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	16.5	<15.0	16.5	16.5	8.39*
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**

TABLE 1
SOIL ANALYTICAL RESULTS

JAMES RANCH UNIT 48 BATTERY
REMEDIATION PERMIT NUMBER 2RP-1142 AND 2RP-2556
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
FS01	4.5	02/08/2019	<0.00199	<0.00199	<0.00199	0.0102	0.0102	<15.0	101	18.5	101	120	1,700
FS02	4.5	02/07/2019	<0.00202	<0.00202	<0.00202	0.00553	0.00553	<14.9	284	68.3	284	352	535
FS03	4	02/07/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	250	72.9	250	323	301
FS04	4	02/07/2019	0.0447	<0.00200	<0.00200	0.00408	<0.0488	<15.0	288	90.9	288	379	214
FS05	4	02/07/2019	0.0545	<0.00200	<0.00200	0.0129	0.0674	<15.0	<15.0	<15.0	<15.0	<15.0	40.8
FS06	2	07/25/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	994	223	994	1,220	87.4*
FS07	2	07/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	172	53.5	172	226	50.2*
FS08	2	07/25/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	13.9*
FS09	2	07/25/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	25.8*
FS10	4.5	07/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	398	67.9	398	466	280
FS11	4.5	07/25/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	96.8	18.6	96.8	115	25.0
FS12	4.5	07/25/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	77.2
FS13	2-4.5	07/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	6.70*
FS14	4.5	07/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	124	20.8	124	145	1,470
FS15	18	07/30/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	11,200
FS16	18	07/30/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	21.6	<15.0	21.6	21.6	11,300
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**

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

ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-1142 and 2RP-2556)

See revised C-141 @ OCD ONLINE

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

nMLB1215336744

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company BOPCO, L.P. 260737	Contact Tony Savoie
Address 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 432-556-8730
Facility Name: James Ranch Unit 48 Battery	Facility Type E&P

Surface Owner Federal	Mineral Owner Federal	~~Lease No. LC0300~~

LOCATION OF RELEASE API 30-015-27791

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	12	22S	30E	990	South	330	West	Eddy

Latitude_N 32.402308___ Longitude W 103.842011

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 30 bbls produced water	Volume Recovered: 10 bbls
Source of Release: Water Transfer Pump	Date and Hour of Occurrence 4/20/12 Time unknown	Date and Hour of Discovery 4/20/12 11:30 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Emergency response #104	
By Whom? Tony Savoie	Date and Hour 4/20/12 12:19 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

RECEIVED
MAY 04 2012
NMOCD ARTESIA

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* A 2" X 11/2" connection on the discharge of the water transfer pump broke. The connection and the associated piping were replaced.

Describe Area Affected and Cleanup Action Taken.*An area covering approximately 2300 sq. ft inside the earthen containment around the tanks and pump were affected by the release along with approximately 200 sq.ft outside the containment area due to the spray from the broken fitting. All of the free standing liquid was recovered with a vacuum truck. A sampling event will be scheduled the week of 5/7/12 to determine the vertical extent of the release. The spill will be remediated following the NMOCD guidelines for spill remediation.

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

Signature: Tony Savoie

Printed Name: Tony Savoie

Title: Waste Mgmt.& Remediation Specialist

E-mail Address: TASavoie@BassPet.com

Date: 5/3/12 Phone:432-556-8730

OIL CONSERVATION DIVISION

Approved by District Supervisor: Signed By

Approval Date: JUN 01 2012 Expiration Date:

Conditions of Approval:

Remediation per OCD Rules & Guidelines. **SUBMIT REMEDIATION PROPOSAL NOT LATER THAN:** 7/1/2012

Attached ☐

2RP-1142

* Attach Additional Sheets If Necessary

District I
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811 S. First St., Artesia, NM 88210
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1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	
District RP	2RP-1142
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #: 2RP-1142
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude 32.402308 Longitude -103.842011
(NAD 83 in decimal degrees to 5 decimal places)

Site Name James Ranch Unit 48 Battery	Site Type: Exploration and Production
Date Release Discovered 4/20/2012	API# *(if applicable)* 30-015-27791

Unit Letter	Section	Township	Range	County
M	12	22S	30E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 30 bbls	Volume Recovered (bbls) 10 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A 2" x 1 1/2" connection on the discharge of the water transfer pump broke. The connection and the associated piping were replaced. An area covering approximately 2,300 sq. ft inside the earthen containment around the tanks and pump were affected by the release along with approximately 200 square feet outside the containment area due to the spray from the broken fitting. All of the free-standing liquid was recovered with a vacuum truck.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-1142
Facility ID	
Application ID	

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? The release volume was greater than 25 bbls.
If YES, was immediate notice given to the OCD? Yes, by Tony Savoie to Emergency Response #104 on 4/20/2012 at 12:19 p.m.	

Initial Response

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

☒ 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 Supervisor

Signature: Date: 3/13/2020

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

OCD Only

Received by: Date:

Incident ID	
District RP	2RP-1142
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-1142
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 3/13/2020

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

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	nMLB1215336744
District RP	2RP-1142
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 3/13/2020

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

OCD Only

Received by: Date:

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

Closure Approved by: Bradford Billings Date: 07/14/2021

Printed Name: Bradford Billings Title: Envi.Spec.A

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

State of New Mexico
Energy Minerals and Natural Resources

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

NM OIL CONSERVATION
ARTESIA DISTRICT
OCT 17 2014
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Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

nAB1429333358 2100737

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P.	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: James Ranch Unit #48	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-27791

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	12	22S	30E	900	South	330	West	Eddy

Latitude N 32.402359 **Longitude** W 103.842167

NATURE OF RELEASE

Type of Release: Crude oil and Produced Water	Volume of Release: 6 Bbls. Oil and 73 Bbls. Produced water	Volume Recovered: 2 Bbls. Oil and 56 Bbls water
Source of Release: Produced water tank	Date and Hour of Occurrence: 10/15/14 time unknown	Date and Hour of Discovery: 10/15/14 at approximately 10:00 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? NMOCD Mike Bratcher and Heather Patterson BLM Jim Amos	
By Whom? Tony Savoie	Date and Hour: 10/15/14 at 3:25 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*The water transfer pump failed to start due to blow fuses in the control panel. The fuses were replaced and the pump was returned to normal operation.

Describe Area Affected and Cleanup Action Taken.*
The spill impacted approximately 2400 sq.ft. of earthen containment around the production tanks. The free standing fluid was recovered and the tanks were washed down. This is the second reportable spill around the tanks. The tank battery will be re-located on-site or the production will be routed to another facility, the tanks will be removed and the area impacted by the release will be cleaned up in accordance to the NMOCD and BLM remediation guidelines.

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

Signature: Tony Savoie

Printed Name: Tony Savoie

Title: Waste Management and Remediation Specialist

E-mail Address: tasavoie@basspet.com

Date: 10/17/2014 Phone: 432-556-8730

OIL CONSERVATION DIVISION

Approved by Environmental Specialist: Signed By Mike Bratcher

Approval Date: 10/20/14 Expiration Date:

Conditions of Approval: Attached ☐

Remediation per O.C.D. Rules & Guidelines
SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 10/20/14

* Attach Additional Sheets If Necessary

(R) See Also: 2RP-1142

2RP-2556

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	
District RP	2RP-2556
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #: 2RP-2556
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude 32.402359 Longitude -103.842167
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: James Ranch Unit 48 Battery	Site Type: Exploration and Production
Date Release Discovered: 10/15/2014	API# *(if applicable):* 30-015-27791

Unit Letter	Section	Township	Range	County
M	12	22S	30E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 6 bbls	Volume Recovered (bbls) 2 bbls
☒ Produced Water	Volume Released (bbls) 73 bbls	Volume Recovered (bbls) 56 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The water transfer pump failed to start due to a blown fuse in the control panel. The fuses were replaced, and the pump was returned to normal operation. The spill affected approximately 2,400 square feet of earthen containment around the production tanks. The free-standing fluid was recovered, and the tanks were washed down.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-2556
Facility ID	
Application ID	

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? The release volume was greater than 25 bbls.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Reported as "Emergency Response"
Yes, by Tony Savoie to Mike Bratcher and Heather Patterson (NMOCD) and Jim Amos (BLM) on 10/15/2014 at 3:25 p.m.

Initial Response

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

☒ 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 Supervisor

Signature: Date: 3/13/2020

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

OCD Only

Received by: Date:

Incident ID	
District RP	2RP-2556
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-2556
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 3/13/2020

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

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	nAB1429333358
District RP	2RP-2556
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 3/13/2020

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

OCD Only

Received by: Date:

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

Closure Approved by: Bradford Billings Date: 07/14/2021

Printed Name: Bradford Billings Title: Envi.Spec.A

ATTACHMENT 2: LITHOLOGIC / SOIL SAMPLE LOGS

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

Identifier:	Date:
BH01	1/29/2019
Project Name:	RP Number:
James Ranch Unit 48	2RP-1142 & 2RP-2556

LITHOLOGIC / SOIL SAMPLING LOG

Logged By:	Method:
RA	Hand auger

Lat/Long:	Field Screening:	Hole Diameter:	Total Depth:
32.402359, -103.842167	PID	3 inch	4 feet bgs

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
		1.3		BH01	0		GP	Gravel caliche mix, dry
	<128	0.7			1		SP	SAND, brown, dry, poorly graded, some silt, dry
	<128	1.0						
					2		SP	SAND, red brown, dry, poorly graded, some clay, moist
	<128	0.9						
					3		SC	CLAY SAND, red brown, poorly graded, moist
	<128	0.6						
				BH01A	4			Total Depth 4 feet bgs
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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

Identifier:	Date:
BH02	1/29/2019
Project Name:	RP Number:
James Ranch Unit 48	2RP-1142 & 2RP-2556

LITHOLOGIC / SOIL SAMPLING LOG

Logged By:	Method:
RA	Hand auger

Lat/Long:	Field Screening:	Hole Diameter:	Total Depth:
32.402359, -103.842167	PID	3 inch	4 feet bgs

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
		64.2	Yes		0		SP	Caliche sand mix, white to gray brown, medium grained, dry
	<128	>5,000	Yes	BH02	1		SM	SILTY SAND, brown, dry, poorly graded, moist
	<128	21			2		SP	SAND, red brown, dry, poorly graded, some silt, moist
	<128	8.3			3		SC	CLAY SAND, red brown, poorly graded, moist
	<128	7.8		BH02A	4			Total Depth 4 feet bgs
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
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Identifier:	Date:
BH03	1/29/2019
Project Name:	RP Number:
James Ranch Unit 48	2RP-1142 & 2RP-2556

LITHOLOGIC / SOIL SAMPLING LOG

Logged By:	Method:
RA	Hand auger

Lat/Long:	Field Screening:	Hole Diameter:	Total Depth:
32.402359, -103.842167	PID	3 inch	4 feet bgs

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
		1.8			0		GP	Caliche gravel mix, white to gray brown, medium grained, dry
	<128	1.8			1		SP	SAND, brown, dry, poorly graded, some silt, dry
	<128	1.6			2		SP	SAND, brown red, dry, poorly graded, some clay, moist
	<128	1.4		BH03	3		SC	CLAY SAND, brown red, poorly graded, moist
	<128	1.6		BH03A	4			Total Depth 4 feet bgs
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
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Identifier:	Date:
PH01	7/19/19
Project Name:	**RP Number:**
JRU 48	2RP-1142 2RP-2556
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: A Byers / Method: Track Hoe
Lat/Long:	Field Screening: PID / Cl- 4% correction factor / Hole Diameter: 2.5' x / Total Depth: 20'
Comments: LR HR	

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
*0915 PID	CALIBRATED		WITH	ISOBUTYLENE	100.0 ppm *			
0930 D	<1607.2 (HR)	62.7	Y	PH01	0	0.5'	surface caliche	pad surface caliche, grey-brown poorly sorted, sandy (m-c.), odor
0935 M		7.2	Y		1	1	SW-SM	brown, ~~poorly~~ well graded silt sand (m-c) no plasticity, no odor
0940 M	<1607.2 (HR)	7.8	N		2	2	SM	brown, poorly graded silt sand (c.), no plasticity, no odor
0945 M	<1607.2 (HR)	4.7	N		3	3	SM	"
0950 M	840 (LR)	173.3	N	PH01A	4	4.5'	SM	" odor
1020 M	2470 (HR)	6.1	N		5 6	6'	SC	brown-red, poorly graded clayey sand (m.) low plasticity, odor
1025 M	2234.4 (HR)	2.9			7 8	8'	SM	red, poorly graded silt sand (m.), no plasticity, no odor
1030 M	1607.2 (HR)	111.2	Y+N		9 10	10'	SM	red & brown poorly graded silt sand (m.) no plasticity, odor
					11 12			

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Carlsbad, New Mexico 88220
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Identifier:	Date:
DH01	7/19/19
Project Name: JRU 48	**RP Number:**
Logged By:	**Method:** Track Hoe
Hole Diameter:	**Total Depth:**

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: PID / Cl⁻ Hach titrators

Comments: +40% correction factor

AR

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					10			
					11			
1050 M	24916 (AR)	2.0	N		12	12'	SW-SM	brown & grey* ~~well~~ poorly graded silt sand (c.) *lower depth, no plasticity, no odor
					13		caliche	soft, grey-white
1120 D	2491.6 (AR)	5.4	N		14	14'	caliche	well cemented, poorly sorted light grey caliche. f-c sand matrix
					15			
1130 D	2716 (AR)	3.8	N		16	16	caliche	light pink, poorly sorted sandy caliche, no odor
					17			
1200 D	7442.9	3.1	N		18	18'	SW-SM	compact, well graded gravelly silt sand (m.), no plasticity, no odor
					19			
1215 D	1607.2	6.1	N		20	20'	SW-SM	"
					21			MAX REACH
					22			

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
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Identifier:	Date:
PH02	7/19/19
Project Name:	**RP Number:**
JRU 48	2RP-1142 2RP-2556
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: A Byers / Method: Track Hoe
Lat/Long:	Field Screening: / Hole Diameter: / Total Depth: 19.5'

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1245	D	(HR) <1607	11.8	Y	PH02	0	0.5'	caliche	grey-brown, poorly sorted, sandy (c.), odorous
1250	M	(HR) <1607	3.0	N	PH02A	1	1.	SM	brown, poorly graded silt sand (c.), no plasticity, no odor
1255	M	(HR) <1607	3.1	N		2	2	SM	"
1300	M	(HR) <1607	3.3	N		3	3	SM	"
1305	M	(HR) <1607 <1624	6.9	N		4	4.5'	SM	"
1325	M	(HR) <1607	3.1	N		5 6	6'	SC	brown-red poorly ~~sorted~~ graded clayey sand (m.), mod plasticity, no odor
1330	M	(HR) <1607	2.3	N		7 8	8'	SM	brown-red poorly graded silt sand (m.) no plasticity, no odor
1340	M	(HR) <1607	0.7	N	PH02B	9 10	10'	SM/caliche	* mix of 8' & 12' soils *
1345	D	(HR) <1607	2.5	N		11 12	12'	caliche	soft, sandy (f-c.) poorly sorted, grey-tan, no odor

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
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Identifier:	Date:
DH02	7/19/19
Project Name: JRU 48	**RP Number:** 2RP-1142 2RP-2556
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: A Byers / Method: Trach Hoe
Lat/Long:	Field Screening: / Hole Diameter: / Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1400 D		~~2.7~~	N		12'	12'	caliche	
1415 D	1607	2.7	N		14'	14'	caliche	lt grey-tan, poorly sorted, sandy (f-c.) grained
1430 D	2116.8	3.3	N		16'	16'	SW-SM	reddish brown well graded, gravelly silt sand (m.), no odor, no plasticity
1445 D	2716	2.1	N		18'	18'	SW-SM	"
1500 D	1808.8	3.0	N		19.5'	19.5'	SW-SM	"
					21	MAX	REACH	

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Carlsbad, New Mexico 88220
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Identifier: PH03	Date: 7/23/19
Project Name: JRU 48	RP Number: 2RP-1142 & 2RP-2556
Logged By: A Byers	Method: Track Hoe
Lat/Long:	Field Screening: PID / HR Cl- Strips
Hole Diameter:	Total Depth:

LITHOLOGIC / SOIL SAMPLING LOG

Comments: 40% correction factor

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	2492	1104	Y		8	8'	SC	reddish brown/black brown poorly graded clayed sand (m.), low plasticity, odor
M	2492	18.7	N		10	10'	SC/ caliche	reddish brown poorly graded clayey sand (m), low plasticity, no odor / caliche interface

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Carlsbad, New Mexico 88220
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Identifier:	Date:
PH04	7/23/19
Project Name:	**RP Number:**
JRU 48	2RP-1142 2RP-2556
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: A Byers / Method: Track Hoe
Lat/Long:	Field Screening: / Hole Diameter: / Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
			excavated		0			
			Y		10	10'	caliche	
D		1693	N		12	12'	caliche	brown, grey poorly sorted caliche sandy (c.)
D		58.8	N		14	14'	SM	light reddish brown, poorly graded silt sand (m.) ; no plasticity
D		30.1 188.3	N		16	16' 16.5'	SM	"
D		10.3	N		18	18'	caliche	red/brown, well graded/poorly sorted caliche, no plastisity
								TOT DEPTH

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
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Identifier:	Date:
PH05	7/23/19
Project Name:	**RP Number:**
JRU 48	2RP-1142 2RP-2556
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: A Byers / Method: Track Hoe
Lat/Long:	Field Screening: / Hole Diameter: / Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			excavated
					1			
					2			
					3			
					4			
					5			
					6	6'	caliche	brown, grey caliche, poorly sorted (sand (f.) - gravel)
D		2093	Y		7			
D		1987	Y		8	8'	caliche	"
					9			
D		1253			10	10'	SW-SM	reddish brown, well graded gravelly silt sand (c.), no plasticity
					11			
D		1438			12	12'	SW-SM	light brown "

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

Identifier:	Date:
PH05	7/23/19
Project Name:	RP Number:

LITHOLOGIC / SOIL SAMPLING LOG

Logged By:	Method:

Lat/Long:	Field Screening:	Hole Diameter:	Total Depth: 21'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					10			
					11			
					12			
					13			
					14	14'		
					15			
					16	16'	SW-SM	reddish brown gravelly silt sand
					17			
					18'	18'		
					19			
					20			
					21	21'	21	TOT DEPTH
					22			

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

Identifier:	Date:
PH06	7/24/2019
Project Name:	RP Number:
JRU 48 Battery	2RP-1142/2RP-2556

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: Anna	Method: Track-hoe

Lat/Long:	Field Screening:	Hole Diameter:	Total Depth:
32.40244748N, 103.84222756W	Hach Chloride Strips & MiniRAE 3000 PID	N/A	17.5 ft

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
					1			
M	<116	3.2	NO	PH06	2	2 ft	SM	Brown, poorly graded moist silt sand (c.), no plasticity, no odor
					3			
M	<116	1.6	NO		4	4 ft	SM	Brown, poorly graded moist silt sand (c.), no plasticity, no odor
					5			
M	<116	2.3	NO		6	6 ft	SC	Brown-red, poorly graded clayey sand (m.), low plasticity, no odor
					7			
M	<116	2.2	NO			7.5 ft	SM	Brown, poorly graded moist silt sand (c.), no plasticity, no odor
					8			
					9			
D	<116	1.8	NO		10	10 ft	Caliche	Poorly cemented/soft, sandy grey caliche, no odor
					11			
M	<116	1.2	NO		12	12 ft	SM	Brown, poorly graded moist silt sand (c.), no plasticity, no odor

LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH06	Date: 7/24/2019
		Project Name: JRU 48 Battery	RP Number: 2RP-1142/2RP-2556
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: Anna	Method: Track-hoe
Lat/Long: 32.40244748N, 103.84222756W	Field Screening: Hach Chloride Strips & MiniRAE 3000 PID	Hole Diameter: N/A	Total Depth: 17.5 ft
Comments:			

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					13			
D	<116	0.7	NO		14	14 ft	SW-SM	Reddish brown, well graded gravelly silt sand (m.) loam, no plasticity, no odor
					15			
					16			
					17			
D	<116	3.1	NO	PH06A		17.5 ft	SW-SM	Reddish brown, well graded gravelly silt sand (m.) loam, no plasticity, no odor
					18			
					19			
					20			
					21			
					22			
					23			
					24			
					25			

ATTACHMENT 3: PHOTOGRAPHIC LOG

View facing northwest of earthen berm around tank battery.

Project: 012918032	XTO Energy, Inc. James Ranch Unit 48 Battery	LTE Advancing Opportunity
February 6, 2019	Photographic Log	

View facing west of initial excavation activities.

Project: 012918032	XTO Energy, Inc. James Ranch Unit 48 Battery	LTE Advancing Opportunity
February 8, 2019	Photographic Log	

View facing north of initial excavation activities.

Project: 012918032	XTO Energy, Inc. James Ranch Unit 48 Battery	LTE Advancing Opportunity
February 8, 2019	Photographic Log	

View facing west post tank battery removal.

Project: 012918032	XTO Energy, Inc. JRU 48 Tank Battery	LTE Advancing Opportunity
July 22, 2019	Photographic Log	

View facing southwest of the open excavation.

Project: 012918032	XTO Energy, Inc. JRU 48 Tank Battery	LTE Advancing Opportunity
July 26, 2019	Photographic Log	

ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS

Analytical Report 575583

for

LT Environmental, Inc.

Project Manager: Adrian Baker

JRU 48 Battery/ 30-015-27791

14-FEB-19

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

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

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

14-FEB-19

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

Reference: XENCO Report No(s): **575583**
JRU 48 Battery/ 30-015-27791
Project Address: NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 575583. 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. 575583 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 575583

LT Environmental, Inc., Arvada, CO

JRU 48 Battery/ 30-015-27791

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	02-06-18 09:45	6"	575583-001
SS02	S	02-06-18 09:48	6"	575583-002
SS03	S	02-06-18 09:51	6"	575583-003
SS04	S	02-06-18 09:54	6"	575583-004
SS05	S	02-06-18 09:57	6"	575583-005
SS06	S	02-06-18 10:00	6"	575583-006

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 48 Battery/ 30-015-27791

Project ID:
Work Order Number(s): *575583*

Report Date: *14-FEB-19*
Date Received: *02/07/2018*

Sample receipt non conformances and comments:

PER CLIENTS EMAIL CORRECTED SAMPLE NAMES. NEW VERSION CREATED JK 02/14/19
SS1 - SS01
SS2 - SS02
SS3 - SS03
SS4 - SS04
SS5 - SS05
SS6 - SS06

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3040890 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3040912 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3041037 Inorganic Anions by EPA 300
Lab Sample ID 576310-003 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 575583-003, -004, -005, -006.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 575583

LT Environmental, Inc., Arvada, CO

Project Name: JRU 48 Battery/ 30-015-27791

Project Id:

Contact: Adrian Baker

Project Location: NM

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

Report Date: 14-FEB-19

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	575583-001		575583-002		575583-003		575583-004		575583-005		575583-006	
	Field Id:	SS01		SS02		SS03		SS04		SS05		SS06	
	Depth:	6"-		6"-		6"-		6"-		6"-		6"-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-06-18 09:45		Feb-06-18 09:48		Feb-06-18 09:51		Feb-06-18 09:54		Feb-06-18 09:57		Feb-06-18 10:00	
BTEX by EPA 8021B	*Extracted:*	Feb-13-18 10:00		Feb-10-18 08:45		Feb-13-18 10:00		Feb-10-18 08:45		Feb-13-18 10:00		Feb-10-18 08:45	
	Analyzed:	** ** ** **		Feb-11-18 00:23		Feb-13-18 16:13		Feb-10-18 18:30		Feb-13-18 16:32		Feb-10-18 19:27	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.497	0.497	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00198	0.00198
Toluene		21.9	0.497	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00198	0.00198
Ethylbenzene		6.56	0.497	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00198	0.00198
m,p-Xylenes		37.3	0.994	<0.00399	0.00399	<0.00401	0.00401	<0.00399	0.00399	<0.00402	0.00402	<0.00396	0.00396
o-Xylene		8.84	0.497	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00198	0.00198
Total Xylenes		46.1	0.497	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00198	0.00198
Total BTEX		74.6	0.497	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00198	0.00198
Inorganic Anions by EPA 300	*Extracted:*	Feb-14-18 10:00		Feb-14-18 10:00		Feb-14-18 11:00		Feb-14-18 11:00		Feb-14-18 11:00		Feb-14-18 11:00	
	Analyzed:	Feb-14-18 18:20		Feb-14-18 18:26		Feb-14-18 14:51		Feb-14-18 14:57		Feb-14-18 15:03		Feb-14-18 15:20	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		299	4.90	<4.99	4.99	<4.93	4.93	<4.94	4.94	<4.90	4.90	436	4.98
TPH by SW8015 Mod	*Extracted:*	Feb-10-18 11:00		Feb-10-18 11:00		Feb-10-18 11:00		Feb-10-18 11:00		Feb-10-18 11:00		Feb-10-18 11:00	
	Analyzed:	Feb-11-18 04:10		Feb-11-18 04:30		Feb-11-18 04:51		Feb-11-18 05:11		Feb-11-18 05:31		Feb-11-18 05:52	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		3390	74.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		11900	74.9	<15.0	15.0	46.7	15.0	26.2	15.0	33.8	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)		1270	74.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		16600	74.9	<15.0	15.0	46.7	15.0	26.2	15.0	33.8	15.0	<15.0	15.0

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

Jessica Kramer
Project Assistant

Certificate of Analytical Results 575583

LT Environmental, Inc., Arvada, CO

JRU 48 Battery/ 30-015-27791

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	02.07.18 08.00
Lab Sample Id:	575583-001	Date Collected:	02.06.18 09.45	Sample Depth:	6"

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	02.14.18 10.00	Basis:	Wet Weight
Seq Number:	3041039				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**299**	4.90	mg/kg	02.14.18 18.20		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.10.18 11.00	Basis:	Wet Weight
Seq Number:	3040795				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**3390**	74.9	mg/kg	02.11.18 04.10		5
Diesel Range Organics (DRO)	C10C28DRO	**11900**	74.9	mg/kg	02.11.18 04.10		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**1270**	74.9	mg/kg	02.11.18 04.10		5
Total TPH	PHC635	**16600**	74.9	mg/kg	02.11.18 04.10		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	02.11.18 04.10	
o-Terphenyl	84-15-1	83	%	70-135	02.11.18 04.10	

Certificate of Analytical Results 575583

LT Environmental, Inc., Arvada, CO

JRU 48 Battery/ 30-015-27791

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	02.07.18 08.00
Lab Sample Id:	575583-001	Date Collected:	02.06.18 09.45	Sample Depth:	6"
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.13.18 10.00	Basis:	Wet Weight
Seq Number:	3040912				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.497	0.497	mg/kg	02.11.18 00.40	U	250
Toluene	108-88-3	**21.9**	0.497	mg/kg	02.11.18 00.40		250
Ethylbenzene	100-41-4	**6.56**	0.497	mg/kg	02.11.18 00.40		250
m,p-Xylenes	179601-23-1	**37.3**	0.994	mg/kg	02.11.18 00.40		250
o-Xylene	95-47-6	**8.84**	0.497	mg/kg	02.11.18 00.40		250
Total Xylenes	1330-20-7	**46.1**	0.497	mg/kg	02.11.18 00.40		250
Total BTEX		**74.6**	0.497	mg/kg	02.11.18 00.40		250

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	97	%	80-120	02.11.18 00.40	
4-Bromofluorobenzene	460-00-4	114	%	80-120	02.11.18 00.40	

Certificate of Analytical Results 575583

LT Environmental, Inc., Arvada, CO

JRU 48 Battery/ 30-015-27791

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	02.07.18 08.00
Lab Sample Id:	575583-002	Date Collected:	02.06.18 09.48	Sample Depth:	6"

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	02.14.18 10.00	Basis:	Wet Weight
Seq Number:	3041039				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	02.14.18 18.26	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.10.18 11.00	Basis:	Wet Weight
Seq Number:	3040795				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.11.18 04.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.11.18 04.30	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.11.18 04.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.11.18 04.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	02.11.18 04.30	
o-Terphenyl	84-15-1	97	%	70-135	02.11.18 04.30	

Certificate of Analytical Results 575583

LT Environmental, Inc., Arvada, CO

JRU 48 Battery/ 30-015-27791

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	02.07.18 08.00
Lab Sample Id:	575583-002	Date Collected:	02.06.18 09.48	Sample Depth:	6"
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.10.18 08.45	Basis:	Wet Weight
Seq Number:	3040890				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.11.18 00.23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.11.18 00.23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.11.18 00.23	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.11.18 00.23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.11.18 00.23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.11.18 00.23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.11.18 00.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	91	%	80-120	02.11.18 00.23	
4-Bromofluorobenzene	460-00-4	99	%	80-120	02.11.18 00.23	

Certificate of Analytical Results 575583

LT Environmental, Inc., Arvada, CO

JRU 48 Battery/ 30-015-27791

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	02.07.18 08.00
Lab Sample Id:	575583-003	Date Collected:	02.06.18 09.51	Sample Depth:	6"

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	02.14.18 11.00	Basis:	Wet Weight
Seq Number:	3041037				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.93	4.93	mg/kg	02.14.18 14.51	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.10.18 11.00	Basis:	Wet Weight
Seq Number:	3040795				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.11.18 04.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	**46.7**	15.0	mg/kg	02.11.18 04.51		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.11.18 04.51	U	1
Total TPH	PHC635	**46.7**	15.0	mg/kg	02.11.18 04.51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	02.11.18 04.51	
o-Terphenyl	84-15-1	102	%	70-135	02.11.18 04.51	

Certificate of Analytical Results 575583

LT Environmental, Inc., Arvada, CO

JRU 48 Battery/ 30-015-27791

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	02.07.18 08.00
Lab Sample Id:	575583-003	Date Collected:	02.06.18 09.51	Sample Depth:	6"
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.13.18 10.00	Basis:	Wet Weight
Seq Number:	3040912				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.13.18 16.13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.13.18 16.13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.13.18 16.13	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.13.18 16.13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.13.18 16.13	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.13.18 16.13	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.13.18 16.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	113	%	80-120	02.13.18 16.13	
1,4-Difluorobenzene	540-36-3	81	%	80-120	02.13.18 16.13	

Certificate of Analytical Results 575583

LT Environmental, Inc., Arvada, CO

JRU 48 Battery/ 30-015-27791

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	02.07.18 08.00
Lab Sample Id:	575583-004	Date Collected:	02.06.18 09.54	Sample Depth:	6"

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	02.14.18 11.00	Basis:	Wet Weight
Seq Number:	3041037				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.94	4.94	mg/kg	02.14.18 14.57	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.10.18 11.00	Basis:	Wet Weight
Seq Number:	3040795				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.11.18 05.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	**26.2**	15.0	mg/kg	02.11.18 05.11		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.11.18 05.11	U	1
Total TPH	PHC635	**26.2**	15.0	mg/kg	02.11.18 05.11		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	02.11.18 05.11	
o-Terphenyl	84-15-1	94	%	70-135	02.11.18 05.11	

Certificate of Analytical Results 575583

LT Environmental, Inc., Arvada, CO

JRU 48 Battery/ 30-015-27791

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	02.07.18 08.00
Lab Sample Id:	575583-004	Date Collected:	02.06.18 09.54	Sample Depth:	6"
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.10.18 08.45	Basis:	Wet Weight
Seq Number:	3040890				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.10.18 18.30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.10.18 18.30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.10.18 18.30	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.10.18 18.30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.10.18 18.30	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.10.18 18.30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.10.18 18.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	80-120	02.10.18 18.30	
1,4-Difluorobenzene	540-36-3	88	%	80-120	02.10.18 18.30	

Certificate of Analytical Results 575583

LT Environmental, Inc., Arvada, CO

JRU 48 Battery/ 30-015-27791

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	02.07.18 08.00
Lab Sample Id:	575583-005	Date Collected:	02.06.18 09.57	Sample Depth:	6"

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	02.14.18 11.00	Basis:	Wet Weight
Seq Number:	3041037				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.90	4.90	mg/kg	02.14.18 15.03	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.10.18 11.00	Basis:	Wet Weight
Seq Number:	3040795				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.11.18 05.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	**33.8**	15.0	mg/kg	02.11.18 05.31		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.11.18 05.31	U	1
Total TPH	PHC635	**33.8**	15.0	mg/kg	02.11.18 05.31		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	02.11.18 05.31	
o-Terphenyl	84-15-1	95	%	70-135	02.11.18 05.31	

Certificate of Analytical Results 575583

LT Environmental, Inc., Arvada, CO

JRU 48 Battery/ 30-015-27791

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	02.07.18 08.00
Lab Sample Id:	575583-005	Date Collected:	02.06.18 09.57	Sample Depth:	6"
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.13.18 10.00	Basis:	Wet Weight
Seq Number:	3040912				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.13.18 16.32	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.13.18 16.32	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.13.18 16.32	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.13.18 16.32	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.13.18 16.32	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.13.18 16.32	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.13.18 16.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119	%	80-120	02.13.18 16.32	
1,4-Difluorobenzene	540-36-3	82	%	80-120	02.13.18 16.32	

Certificate of Analytical Results 575583

LT Environmental, Inc., Arvada, CO

JRU 48 Battery/ 30-015-27791

Sample Id:	**SS06**	Matrix:	Soil	Date Received:	02.07.18 08.00
Lab Sample Id:	575583-006	Date Collected:	02.06.18 10.00	Sample Depth:	6"

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	02.14.18 11.00	Basis:	Wet Weight
Seq Number:	3041037				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**436**	4.98	mg/kg	02.14.18 15.20		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.10.18 11.00	Basis:	Wet Weight
Seq Number:	3040795				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.11.18 05.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.11.18 05.52	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.11.18 05.52	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.11.18 05.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	02.11.18 05.52	
o-Terphenyl	84-15-1	97	%	70-135	02.11.18 05.52	

Certificate of Analytical Results 575583

LT Environmental, Inc., Arvada, CO

JRU 48 Battery/ 30-015-27791

Sample Id:	**SS06**	Matrix:	Soil	Date Received:	02.07.18 08.00
Lab Sample Id:	575583-006	Date Collected:	02.06.18 10.00	Sample Depth:	6"
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.10.18 08.45	Basis:	Wet Weight
Seq Number:	3040890				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.10.18 19.27	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.10.18 19.27	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.10.18 19.27	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	02.10.18 19.27	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.10.18 19.27	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.10.18 19.27	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.10.18 19.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	80	%	80-120	02.10.18 19.27	
4-Bromofluorobenzene	460-00-4	110	%	80-120	02.10.18 19.27	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 575583

LT Environmental, Inc.

JRU 48 Battery/ 30-015-27791

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3041039 Matrix: Solid Date Prep: 02.14.18
MB Sample Id: 7639084-1-BLK LCS Sample Id: 7639084-1-BKS LCSD Sample Id: 7639084-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	274	110	273	109	90-110	0	20	mg/kg	02.14.18 11:32	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3041037 Matrix: Solid Date Prep: 02.14.18
MB Sample Id: 7639085-1-BLK LCS Sample Id: 7639085-1-BKS LCSD Sample Id: 7639085-1-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	273	109	273	109	90-110	0	20	mg/kg	02.14.18 12:44	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3041039 Matrix: Soil Date Prep: 02.14.18
Parent Sample Id: 575580-001 MS Sample Id: 575580-001 S MSD Sample Id: 575580-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	51.9	248	334	114	336	115	90-110	1	20	mg/kg	02.14.18 11:50	X

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3041039 Matrix: Soil Date Prep: 02.14.18
Parent Sample Id: 575581-005 MS Sample Id: 575581-005 S MSD Sample Id: 575581-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.77	249	303	118	314	122	90-110	4	20	mg/kg	02.14.18 17:14	X

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3041037 Matrix: Soil Date Prep: 02.14.18
Parent Sample Id: 575583-005 MS Sample Id: 575583-005 S MSD Sample Id: 575583-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.90	245	288	118	293	120	90-110	2	20	mg/kg	02.14.18 15:09	X

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 575583

LT Environmental, Inc.

JRU 48 Battery/ 30-015-27791

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

Seq Number: 3041037 Matrix: Soil Date Prep: 02.14.18

Parent Sample Id: 576310-003 MS Sample Id: 576310-003 S MSD Sample Id: 576310-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	846	250	1110	106	1090	98	90-110	2	20	mg/kg	02.14.18 13:02	

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

Seq Number: 3040795 Matrix: Solid Date Prep: 02.10.18

MB Sample Id: 7638962-1-BLK LCS Sample Id: 7638962-1-BKS LCSD Sample Id: 7638962-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	952	95	813	81	70-135	16	35	mg/kg	02.10.18 21:55	
Diesel Range Organics (DRO)	<15.0	1000	1090	109	929	93	70-135	16	35	mg/kg	02.10.18 21:55	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		107		94		70-135	%	02.10.18 21:55
o-Terphenyl	99		112		97		70-135	%	02.10.18 21:55

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

Seq Number: 3040795 Matrix: Soil Date Prep: 02.10.18

Parent Sample Id: 575575-001 MS Sample Id: 575575-001 S MSD Sample Id: 575575-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	978	98	990	99	70-135	1	35	mg/kg	02.10.18 22:55	
Diesel Range Organics (DRO)	103	1000	1090	99	1100	100	70-135	1	35	mg/kg	02.10.18 22:55	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		105		70-135	%	02.10.18 22:55
o-Terphenyl	111		107		70-135	%	02.10.18 22:55

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

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

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

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

QC Summary 575583

LT Environmental, Inc.

JRU 48 Battery/ 30-015-27791

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3040890 — Matrix: Solid — Date Prep: 02.10.18
MB Sample Id: 7638896-1-BLK — LCS Sample Id: 7638896-1-BKS — LCSD Sample Id: 7638896-1-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	0.0751	75	0.0780	79	70-130	4	35	mg/kg	02.10.18 11:00	
Toluene	<0.00199	0.0996	0.0755	76	0.0763	77	70-130	1	35	mg/kg	02.10.18 11:00	
Ethylbenzene	<0.00199	0.0996	0.0784	79	0.0791	80	71-129	1	35	mg/kg	02.10.18 11:00	
m,p-Xylenes	<0.00398	0.199	0.153	77	0.155	78	70-135	1	35	mg/kg	02.10.18 11:00	
o-Xylene	<0.00199	0.0996	0.0769	77	0.0776	78	71-133	1	35	mg/kg	02.10.18 11:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	82		89		97		80-120	%	02.10.18 11:00
4-Bromofluorobenzene	81		95		104		80-120	%	02.10.18 11:00

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3040912 — Matrix: Solid — Date Prep: 02.13.18
MB Sample Id: 7639041-1-BLK — LCS Sample Id: 7639041-1-BKS — LCSD Sample Id: 7639041-1-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	0.0990	0.0991	100	0.0885	89	70-130	11	35	mg/kg	02.13.18 11:26	
Toluene	<0.00198	0.0990	0.0965	97	0.0869	87	70-130	10	35	mg/kg	02.13.18 11:26	
Ethylbenzene	<0.00198	0.0990	0.100	101	0.0903	90	71-129	10	35	mg/kg	02.13.18 11:26	
m,p-Xylenes	<0.00396	0.198	0.195	98	0.176	88	70-135	10	35	mg/kg	02.13.18 11:26	
o-Xylene	<0.00198	0.0990	0.0993	100	0.0899	90	71-133	10	35	mg/kg	02.13.18 11:26	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	82		88		92		80-120	%	02.13.18 11:26
4-Bromofluorobenzene	112		119		115		80-120	%	02.13.18 11:26

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3040890 — Matrix: Soil — Date Prep: 02.10.18
Parent Sample Id: 575587-001 — MS Sample Id: 575587-001 S — MSD Sample Id: 575587-001 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	0.155	155	0.0946	94	70-130	48	35	mg/kg	02.10.18 11:38	XF
Toluene	<0.00200	0.100	0.0852	85	0.0896	89	70-130	5	35	mg/kg	02.10.18 11:38	
Ethylbenzene	<0.00200	0.100	0.0881	88	0.0929	92	71-129	5	35	mg/kg	02.10.18 11:38	
m,p-Xylenes	<0.00401	0.200	0.171	86	0.181	90	70-135	6	35	mg/kg	02.10.18 11:38	
o-Xylene	<0.00200	0.100	0.0859	86	0.0909	90	71-133	6	35	mg/kg	02.10.18 11:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		92		80-120	%	02.10.18 11:38
4-Bromofluorobenzene	100		100		80-120	%	02.10.18 11:38

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

QC Summary 575583

LT Environmental, Inc.

JRU 48 Battery/ 30-015-27791

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

Seq Number: 3040912 Matrix: Soil Date Prep: 02.13.18

Parent Sample Id: 576101-001 MS Sample Id: 576101-001 S MSD Sample Id: 576101-001 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	0.0994	0.0829	83	0.0930	92	70-130	11	35	mg/kg	02.13.18 12:41	
Toluene	0.00203	0.0994	0.0440	42	0.0441	42	70-130	0	35	mg/kg	02.13.18 12:41	X
Ethylbenzene	<0.00199	0.0994	0.0437	44	0.0367	36	71-129	17	35	mg/kg	02.13.18 12:41	X
m,p-Xylenes	<0.00398	0.199	0.0860	43	0.0666	33	70-135	25	35	mg/kg	02.13.18 12:41	X
o-Xylene	<0.00199	0.0994	0.0430	43	0.0329	33	71-133	27	35	mg/kg	02.13.18 12:41	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	83		83		80-120	%	02.13.18 12:41
4-Bromofluorobenzene	81		80		80-120	%	02.13.18 12:41

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

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Revision 2016.1

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Xenco Quote #

Xenco Job # 575583

Client / Reporting Information

Company Name / Branch: LT Environmental / Permian

Company Address: 3300 N. A Street Bldg 1 Suite 103

Email: Abaker@LTenv.com Phone No: 432-704-5178

Project Contact: Adrian Baker

Samplers's Name: Aaron Williamson

Project Information

Project Name/Number: JRU 48 Battery / 30-015-27791

Project Location: NM

Invoice To: XTO Energy - Kyle Littrell

PO Number: 30 015 27791

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX Method 8021	TPH Method 8015	Chloride Method 300.1	Field Comments
1	SS1	6"	7/6/18	9:45	S	1									X	X	X	
2	SS2			9:48											X	X	X	
3	SS3			9:51											X	X	X	
4	SS4			9:54											X	X	X	
5	SS5			9:57											X	X	X	
6	SS6			10:00											X	X	X	
7																		
8																		
9																		
10	NFE ARM																	

Turnaround Time (Business days)

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

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

Data Deliverable Information

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

Notes:

Temp: 4 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 3.8

FEDEX Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		7/6/18 17:45				
2					7/7/18 8:00 am	
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
4						
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
						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 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.

Analytical Report 585764

for

LT Environmental, Inc.

Project Manager: Adrian Baker

JRU 48

21-MAY-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-25), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

21-MAY-18

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

Reference: XENCO Report No(s): **585764**
JRU 48
Project Address: NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 585764. 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. 585764 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 585764

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS1A	S	05-09-18 14:30	22 In	585764-001

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 48

Project ID:
Work Order Number(s): *585764*

Report Date: *21-MAY-18*
Date Received: *05/11/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3050445 BTEX by EPA 8021B

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

Certificate of Analysis Summary 585764

LT Environmental, Inc., Arvada, CO

Project Name: JRU 48

Project Id:
Contact: Adrian Baker
Project Location: NM

Date Received in Lab: Fri May-11-18 10:55 am
Report Date: 21-MAY-18
Project Manager: Jessica Kramer

Analysis Requested								
	Lab Id:	585764-001						
	Field Id:	SS1A						
	Depth:	22- In						
	Matrix:	SOIL						
	Sampled:	May-09-18 14:30						
BTEX by EPA 8021B	***Extracted:***	May-16-18 11:00						
	Analyzed:	May-16-18 21:08						
	Units/RL:	mg/kg	RL					
Benzene		<0.00199	0.00199					
Toluene		<0.00199	0.00199					
Ethylbenzene		<0.00199	0.00199					
m,p-Xylenes		<0.00398	0.00398					
o-Xylene		<0.00199	0.00199					
Total Xylenes		<0.00199	0.00199					
Total BTEX		<0.00199	0.00199					
Inorganic Anions by EPA 300	***Extracted:***	May-14-18 15:30						
	Analyzed:	May-14-18 18:44						
	Units/RL:	mg/kg	RL					
Chloride		137	4.95					
TPH by SW8015 Mod	***Extracted:***	May-12-18 10:00						
	Analyzed:	May-13-18 11:37						
	Units/RL:	mg/kg	RL					
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0					
Diesel Range Organics (DRO)		19.9	15.0					
Oil Range Hydrocarbons (ORO)		<15.0	15.0					
Total TPH		19.9	15.0					

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

Jessica Kramer
Project Assistant

Final 1.000

Certificate of Analytical Results 585764

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SS1A**	Matrix:	Soil	Date Received:	05.11.18 10.55
Lab Sample Id:	585764-001	Date Collected:	05.09.18 14.30	Sample Depth:	22 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.14.18 15.30	Basis:	Wet Weight
Seq Number:	3050071				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**137**	4.95	mg/kg	05.14.18 18.44		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.12.18 10.00	Basis:	Wet Weight
Seq Number:	3049983				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.13.18 11.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	**19.9**	15.0	mg/kg	05.13.18 11.37		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	05.13.18 11.37	U	1
Total TPH	PHC635	**19.9**	15.0	mg/kg	05.13.18 11.37		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	05.13.18 11.37	
o-Terphenyl	84-15-1	87	%	70-135	05.13.18 11.37	

Certificate of Analytical Results 585764

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SS1A**	Matrix:	Soil	Date Received:	05.11.18 10.55
Lab Sample Id:	585764-001	Date Collected:	05.09.18 14.30	Sample Depth:	22 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.16.18 11.00	Basis:	Wet Weight
Seq Number:	3050445				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.16.18 21.08	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.16.18 21.08	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.16.18 21.08	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.16.18 21.08	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.16.18 21.08	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.16.18 21.08	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.16.18 21.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	84	%	70-130	05.16.18 21.08	
4-Bromofluorobenzene	460-00-4	87	%	70-130	05.16.18 21.08	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 585764

LT Environmental, Inc.

JRU 48

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3050071 — Matrix: Solid — Date Prep: 05.14.18
MB Sample Id: 7644694-1-BLK — LCS Sample Id: 7644694-1-BKS — LCSD Sample Id: 7644694-1-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	230	92	225	90	90-110	2	20	mg/kg	05.14.18 16:08	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3050071 — Matrix: Soil — Date Prep: 05.14.18
Parent Sample Id: 585760-002 — MS Sample Id: 585760-002 S — MSD Sample Id: 585760-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	54.6	250	322	107	314	104	90-110	3	20	mg/kg	05.14.18 16:26	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3050071 — Matrix: Soil — Date Prep: 05.14.18
Parent Sample Id: 585761-002 — MS Sample Id: 585761-002 S — MSD Sample Id: 585761-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	257	103	246	98	90-110	4	20	mg/kg	05.14.18 17:50	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3049983 — Matrix: Solid — Date Prep: 05.12.18
MB Sample Id: 7644589-1-BLK — LCS Sample Id: 7644589-1-BKS — LCSD Sample Id: 7644589-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1040	104	991	99	70-135	5	20	mg/kg	05.13.18 04:49	
Diesel Range Organics (DRO)	<15.0	1000	1130	113	1070	107	70-135	5	20	mg/kg	05.13.18 04:49	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		125		113		70-135	%	05.13.18 04:49
o-Terphenyl	106		116		102		70-135	%	05.13.18 04:49

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

Final 1.000

QC Summary 585764

LT Environmental, Inc.

JRU 48

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3049983 | Matrix: Soil | Date Prep: 05.12.18
Parent Sample Id: 585815-001 | MS Sample Id: 585815-001 S | MSD Sample Id: 585815-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	979	98	898	90	70-135	9	20	mg/kg	05.13.18 06:11	
Diesel Range Organics (DRO)	<15.0	997	1070	107	995	100	70-135	7	20	mg/kg	05.13.18 06:11	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		107		70-135	%	05.13.18 06:11
o-Terphenyl	108		95		70-135	%	05.13.18 06:11

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3050445 | Matrix: Solid | Date Prep: 05.16.18
MB Sample Id: 7644897-1-BLK | LCS Sample Id: 7644897-1-BKS | LCSD Sample Id: 7644897-1-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	0.103	103	0.0994	98	70-130	4	35	mg/kg	05.16.18 17:39	
Toluene	<0.00201	0.100	0.102	102	0.0970	96	70-130	5	35	mg/kg	05.16.18 17:39	
Ethylbenzene	<0.00201	0.100	0.104	104	0.0982	97	70-130	6	35	mg/kg	05.16.18 17:39	
m,p-Xylenes	<0.00402	0.201	0.218	108	0.208	103	70-130	5	35	mg/kg	05.16.18 17:39	
o-Xylene	<0.00201	0.100	0.112	112	0.103	102	70-130	8	35	mg/kg	05.16.18 17:39	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		103		97		70-130	%	05.16.18 17:39
4-Bromofluorobenzene	86		101		93		70-130	%	05.16.18 17:39

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3050445 | Matrix: Soil | Date Prep: 05.16.18
Parent Sample Id: 585762-001 | MS Sample Id: 585762-001 S | MSD Sample Id: 585762-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.00873	0.0998	0.0691	60	0.0797	71	70-130	14	35	mg/kg	05.16.18 18:22	X
Toluene	0.00488	0.0998	0.0402	35	0.0538	49	70-130	29	35	mg/kg	05.16.18 18:22	X
Ethylbenzene	<0.00200	0.0998	0.0258	26	0.0357	36	70-130	32	35	mg/kg	05.16.18 18:22	X
m,p-Xylenes	0.00709	0.200	0.0560	24	0.0711	32	70-130	24	35	mg/kg	05.16.18 18:22	X
o-Xylene	<0.00200	0.0998	0.0292	29	0.0398	40	70-130	31	35	mg/kg	05.16.18 18:22	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		103		70-130	%	05.16.18 18:22
4-Bromofluorobenzene	94		95		70-130	%	05.16.18 18:22

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

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

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

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

Final 1.000

CHAIN OF CUSTODY

Page ___ Of ___

XENCO LABORATORIES
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Xenco Quote # | Xenco Job # 5057164

Client / Reporting Information

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

Project Information

Project Name/Number: JRU 48
Project Location: NM
Invoice To: XTO Energy - Kyle Littrell
PO Number: 30-015-27791 (2RP-1142)

Analytical Information

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX (8021)	TPH (8015B)	Cl-	Field Comments
1	SS1A	22"	5/9/18	1430	S	1									X	X	X	
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Matrix Codes

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

Turnaround Time (Business days)

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

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

Data Deliverable Information

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

Notes:
Temp: 2.1 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 1.9

FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		5/10 12:40			5/10/18 13:40	
2	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		5/10 3:30P				
4	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
5						

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 05/11/2018 10:55:00 AM

Work Order #: 585764

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)?	1.9
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 05/11/2018
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 05/11/2018
Jessica Kramer

Analytical Report 588641

for

LT Environmental, Inc.

Project Manager: Adrian Baker

JRU-48 TB

11-JUN-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

11-JUN-18

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

Reference: XENCO Report No(s): **588641**
JRU-48 TB
Project Address: NM 2RP-2556

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) 588641. 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. 588641 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 588641

LT Environmental, Inc., Arvada, CO

JRU-48 TB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS07 @ 6" BGS.	S	06-04-18 14:20	6 In	588641-001
SS08	S	06-04-18 14:25	6 In	588641-002

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU-48 TB

Project ID:
Work Order Number(s): *588641*

Report Date: *11-JUN-18*
Date Received: *06/08/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3052932 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3052970 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 588641

LT Environmental, Inc., Arvada, CO

Project Name: JRU-48 TB

Project Id:
Contact: Adrian Baker
Project Location: NM 2RP-2556

Date Received in Lab: Fri Jun-08-18 10:09 am
Report Date: 11-JUN-18
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	588641-001		588641-002					
	Field Id:	SS07 @ 6" BGS.		SS08					
	Depth:	6- In		6- In					
	Matrix:	SOIL		SOIL					
	Sampled:	Jun-04-18 14:20		Jun-04-18 14:25					
BTEX by EPA 8021B	***Extracted:***	Jun-10-18 08:30		Jun-09-18 07:55					
	Analyzed:	Jun-10-18 23:41		Jun-10-18 02:31					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		0.0772	0.0399	0.342	0.0502				
Toluene		2.24	0.0399	0.285	0.0502				
Ethylbenzene		2.04	0.0399	2.24	0.0502				
m,p-Xylenes		4.80	0.0798	3.75	0.100				
o-Xylene		1.86	0.0399	0.797	0.0502				
Total Xylenes		6.66	0.0399	4.55	0.0502				
Total BTEX		11.0	0.0399	7.41	0.0502				
Inorganic Anions by EPA 300	***Extracted:***	Jun-08-18 15:15		Jun-08-18 15:15					
	Analyzed:	Jun-09-18 01:53		Jun-09-18 17:33					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		1040	4.95	52.7	4.98				
TPH by SW8015 Mod	***Extracted:***	Jun-08-18 14:00		Jun-08-18 14:00					
	Analyzed:	Jun-09-18 03:05		Jun-09-18 03:26					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		1640	150	1370	74.8				
Diesel Range Organics (DRO)		13300	150	11500	74.8				
Oil Range Hydrocarbons (ORO)		287	150	162	74.8				
Total TPH		15200	150	13000	74.8				

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

Jessica Kramer
Project Assistant

Certificate of Analytical Results 588641

LT Environmental, Inc., Arvada, CO

JRU-48 TB

Sample Id:	**SS07 @ 6" BGS.**	Matrix:	Soil	Date Received:	06.08.18 10.09
Lab Sample Id:	588641-001	Date Collected:	06.04.18 14.20	Sample Depth:	6 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	SCM	Date Prep:	06.08.18 15.15	Basis:	Wet Weight
Seq Number:	3052933				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1040**	4.95	mg/kg	06.09.18 01.53		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.08.18 14.00	Basis:	Wet Weight
Seq Number:	3052902				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**1640**	150	mg/kg	06.09.18 03.05		10
Diesel Range Organics (DRO)	C10C28DRO	**13300**	150	mg/kg	06.09.18 03.05		10
Oil Range Hydrocarbons (ORO)	PHCG2835	**287**	150	mg/kg	06.09.18 03.05		10
Total TPH	PHC635	**15200**	150	mg/kg	06.09.18 03.05		10

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	06.09.18 03.05	
o-Terphenyl	84-15-1	130	%	70-135	06.09.18 03.05	

Certificate of Analytical Results 588641

LT Environmental, Inc., Arvada, CO

JRU-48 TB

Sample Id:	**SS07 @ 6" BGS.**	Matrix:	Soil	Date Received:	06.08.18 10.09
Lab Sample Id:	588641-001	Date Collected:	06.04.18 14.20	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	06.10.18 08.30	Basis:	Wet Weight
Seq Number:	3052970				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.0772**	0.0399	mg/kg	06.10.18 23.41		20
Toluene	108-88-3	**2.24**	0.0399	mg/kg	06.10.18 23.41		20
Ethylbenzene	100-41-4	**2.04**	0.0399	mg/kg	06.10.18 23.41		20
m,p-Xylenes	179601-23-1	**4.80**	0.0798	mg/kg	06.10.18 23.41		20
o-Xylene	95-47-6	**1.86**	0.0399	mg/kg	06.10.18 23.41		20
Total Xylenes	1330-20-7	**6.66**	0.0399	mg/kg	06.10.18 23.41		20
Total BTEX		**11.0**	0.0399	mg/kg	06.10.18 23.41		20

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	76	%	70-130	06.10.18 23.41	
1,4-Difluorobenzene	540-36-3	86	%	70-130	06.10.18 23.41	

Certificate of Analytical Results 588641

LT Environmental, Inc., Arvada, CO

JRU-48 TB

Sample Id:	**SS08**	Matrix:	Soil	Date Received:	06.08.18 10.09
Lab Sample Id:	588641-002	Date Collected:	06.04.18 14.25	Sample Depth:	6 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	SCM	Date Prep:	06.08.18 15.15	Basis:	Wet Weight
Seq Number:	3052933				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**52.7**	4.98	mg/kg	06.09.18 17.33		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.08.18 14.00	Basis:	Wet Weight
Seq Number:	3052902				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**1370**	74.8	mg/kg	06.09.18 03.26		5
Diesel Range Organics (DRO)	C10C28DRO	**11500**	74.8	mg/kg	06.09.18 03.26		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**162**	74.8	mg/kg	06.09.18 03.26		5
Total TPH	PHC635	**13000**	74.8	mg/kg	06.09.18 03.26		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	06.09.18 03.26	
o-Terphenyl	84-15-1	127	%	70-135	06.09.18 03.26	

Certificate of Analytical Results 588641

LT Environmental, Inc., Arvada, CO

JRU-48 TB

Sample Id:	**SS08**	Matrix:	Soil	Date Received:	06.08.18 10.09
Lab Sample Id:	588641-002	Date Collected:	06.04.18 14.25	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	06.09.18 07.55	Basis:	Wet Weight
Seq Number:	3052932				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.342**	0.0502	mg/kg	06.10.18 02.31		25
Toluene	108-88-3	**0.285**	0.0502	mg/kg	06.10.18 02.31		25
Ethylbenzene	100-41-4	**2.24**	0.0502	mg/kg	06.10.18 02.31		25
m,p-Xylenes	179601-23-1	**3.75**	0.100	mg/kg	06.10.18 02.31		25
o-Xylene	95-47-6	**0.797**	0.0502	mg/kg	06.10.18 02.31		25
Total Xylenes	1330-20-7	**4.55**	0.0502	mg/kg	06.10.18 02.31		25
Total BTEX		**7.41**	0.0502	mg/kg	06.10.18 02.31		25

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	82	%	70-130	06.10.18 02.31	
1,4-Difluorobenzene	540-36-3	82	%	70-130	06.10.18 02.31	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 588641

LT Environmental, Inc.

JRU-48 TB

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3052933 — Matrix: Solid — Date Prep: 06.08.18
MB Sample Id: 7656302-1-BLK — LCS Sample Id: 7656302-1-BKS — LCSD Sample Id: 7656302-1-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	270	108	267	107	90-110	1	20	mg/kg	06.09.18 00:05	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3052933 — Matrix: Soil — Date Prep: 06.08.18
Parent Sample Id: 588639-001 — MS Sample Id: 588639-001 S — MSD Sample Id: 588639-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	47.6	247	345	120	337	117	90-110	2	20	mg/kg	06.09.18 00:21	X

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3052933 — Matrix: Soil — Date Prep: 06.08.18
Parent Sample Id: 588640-005 — MS Sample Id: 588640-005 S — MSD Sample Id: 588640-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	325	248	583	104	584	104	90-110	0	20	mg/kg	06.09.18 01:36	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3052902 — Matrix: Solid — Date Prep: 06.08.18
MB Sample Id: 7656356-1-BLK — LCS Sample Id: 7656356-1-BKS — LCSD Sample Id: 7656356-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	943	94	954	95	70-135	1	20	mg/kg	06.08.18 19:37	
Diesel Range Organics (DRO)	<15.0	1000	993	99	1000	100	70-135	1	20	mg/kg	06.08.18 19:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		122		125		70-135	%	06.08.18 19:37
o-Terphenyl	106		108		107		70-135	%	06.08.18 19:37

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

QC Summary 588641

LT Environmental, Inc.

JRU-48 TB

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3052902 | Matrix: Soil | Date Prep: 06.08.18
Parent Sample Id: 588620-001 | MS Sample Id: 588620-001 S | MSD Sample Id: 588620-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	890	89	903	90	70-135	1	20	mg/kg	06.08.18 20:38	
Diesel Range Organics (DRO)	<15.0	998	924	93	942	94	70-135	2	20	mg/kg	06.08.18 20:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		124		70-135	%	06.08.18 20:38
o-Terphenyl	107		107		70-135	%	06.08.18 20:38

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3052932 | Matrix: Solid | Date Prep: 06.09.18
MB Sample Id: 7656352-1-BLK | LCS Sample Id: 7656352-1-BKS | LCSD Sample Id: 7656352-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0866	86	0.0847	85	70-130	2	35	mg/kg	06.09.18 18:38	
Toluene	<0.00202	0.101	0.0902	89	0.0897	90	70-130	1	35	mg/kg	06.09.18 18:38	
Ethylbenzene	<0.00202	0.101	0.0922	91	0.0914	91	70-130	1	35	mg/kg	06.09.18 18:38	
m,p-Xylenes	<0.00403	0.202	0.192	95	0.187	94	70-130	3	35	mg/kg	06.09.18 18:38	
o-Xylene	<0.00202	0.101	0.0929	92	0.0977	98	70-130	5	35	mg/kg	06.09.18 18:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		95		94		70-130	%	06.09.18 18:38
4-Bromofluorobenzene	93		95		99		70-130	%	06.09.18 18:38

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3052970 | Matrix: Solid | Date Prep: 06.10.18
MB Sample Id: 7656395-1-BLK | LCS Sample Id: 7656395-1-BKS | LCSD Sample Id: 7656395-1-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	0.0879	88	0.0862	85	70-130	2	35	mg/kg	06.10.18 19:28	
Toluene	<0.00200	0.100	0.0934	93	0.0907	90	70-130	3	35	mg/kg	06.10.18 19:28	
Ethylbenzene	<0.00200	0.100	0.0917	92	0.0893	88	70-130	3	35	mg/kg	06.10.18 19:28	
m,p-Xylenes	<0.00401	0.200	0.189	95	0.185	92	70-130	2	35	mg/kg	06.10.18 19:28	
o-Xylene	<0.00200	0.100	0.0921	92	0.0897	89	70-130	3	35	mg/kg	06.10.18 19:28	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		99		94		70-130	%	06.10.18 19:28
4-Bromofluorobenzene	87		98		94		70-130	%	06.10.18 19:28

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

Final 1.000

QC Summary 588641

LT Environmental, Inc.

JRU-48 TB

Analytical Method: BTEX by EPA 8021B
Prep Method: SW5030B
Seq Number: 3052932
Matrix: Soil
Date Prep: 06.09.18
Parent Sample Id: 588112-021
MS Sample Id: 588112-021 S
MSD Sample Id: 588112-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0473	47	0.0544	55	70-130	14	35	mg/kg	06.09.18 19:16	X
Toluene	<0.00200	0.100	0.0502	50	0.0567	57	70-130	12	35	mg/kg	06.09.18 19:16	X
Ethylbenzene	<0.00200	0.100	0.0468	47	0.0537	54	70-130	14	35	mg/kg	06.09.18 19:16	X
m,p-Xylenes	<0.00401	0.200	0.0968	48	0.111	56	70-130	14	35	mg/kg	06.09.18 19:16	X
o-Xylene	<0.00200	0.100	0.0465	47	0.0653	66	70-130	34	35	mg/kg	06.09.18 19:16	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	88		106		70-130	%	06.09.18 19:16
4-Bromofluorobenzene	95		104		70-130	%	06.09.18 19:16

Analytical Method: BTEX by EPA 8021B
Prep Method: SW5030B
Seq Number: 3052970
Matrix: Soil
Date Prep: 06.10.18
Parent Sample Id: 588647-004
MS Sample Id: 588647-004 S
MSD Sample Id: 588647-004 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	0.0756	75	0.0760	75	70-130	1	35	mg/kg	06.10.18 20:04	
Toluene	<0.00202	0.101	0.0813	80	0.0797	79	70-130	2	35	mg/kg	06.10.18 20:04	
Ethylbenzene	<0.00202	0.101	0.0814	81	0.0819	81	70-130	1	35	mg/kg	06.10.18 20:04	
m,p-Xylenes	<0.00404	0.202	0.167	83	0.171	85	70-130	2	35	mg/kg	06.10.18 20:04	
o-Xylene	<0.00202	0.101	0.0767	76	0.0782	77	70-130	2	35	mg/kg	06.10.18 20:04	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		98		70-130	%	06.10.18 20:04
4-Bromofluorobenzene	104		106		70-130	%	06.10.18 20:04

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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

Final 1.000

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

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

Xenco Quote #
Xenco Job # 598644

Client / Reporting Information

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

Project Information

Project Name/Number: JRU-48 TB
Project Location: NM 2RP-2556
Invoice To: XTO Energy - Kyle Littrell
PO Number:

Analytical Information

BTEX 8021 (only BTEX)
TPH (MRO, GRO, DRO) 8015
Chloride (300.0)

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments
1	SS07 @ 6" bgs.	6"	06/06/18	14:20	S	1								X	N
2	SS08	6"	"	14:25	S	1								X	W
3															
4															
5															
6															
7															
8															
9															
10															

Turnaround Time (Business days)

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

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

Data Deliverable Information

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

Notes:

FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1				Timothy P. Elliott		
2	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		6/7/18 930			6/7 15:30	6/8/18 1009
4	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
5						X 4.2 -0.2 4.0

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 06/08/2018 10:09:00 AM

Work Order #: 588641

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 06/08/2018
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 06/08/2018
Jessica Kramer

Analytical Report 588641

for

LT Environmental, Inc.

Project Manager: Adrian Baker

JRU-48 TB

09-JUL-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-15)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

Analytical Report 613489

for

LT Environmental, Inc.

Project Manager: Adrian Baker

JRU-48

012918032

12-FEB-19

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

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

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

12-FEB-19

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

Reference: XENCO Report No(s): **613489**
JRU-48
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) 613489. 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. 613489 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 613489

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	01-29-19 12:40	2 ft	613489-001
BH02	S	01-29-19 13:25	1 ft	613489-002
BH03	S	01-29-19 14:15	3 ft	613489-003
BH01A	S	01-29-19 12:25	4 ft	613489-004
BH02A	S	01-29-19 13:40	4 ft	613489-005
BH03A	S	01-29-19 14:20	4 ft	613489-006

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU-48

Project ID: *012918032*
Work Order Number(s): *613489*

Report Date: *12-FEB-19*
Date Received: *02/05/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3078719 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3078779 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 613489

LT Environmental, Inc., Arvada, CO

Project Name: JRU-48

Project Id: 012918032
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Tue Feb-05-19 01:09 pm
Report Date: 12-FEB-19
Project Manager: Jessica Kramer

Analysis Requested		613489-001		613489-002		613489-003		613489-004		613489-005		613489-006	
	Field Id:	BH01		BH02		BH03		BH01A		BH02A		BH03A	
	Depth:	2- ft		1- ft		3- ft		4- ft		4- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-29-19 12:40		Jan-29-19 13:25		Jan-29-19 14:15		Jan-29-19 12:25		Jan-29-19 13:40		Jan-29-19 14:20	
BTEX by EPA 8021B	*Extracted:*	Feb-08-19 15:00		Feb-08-19 15:00		Feb-08-19 15:00		Feb-08-19 15:00		Feb-11-19 17:00		Feb-11-19 17:00	
	Analyzed:	Feb-11-19 16:04		Feb-11-19 16:25		Feb-11-19 16:47		Feb-11-19 17:07		Feb-12-19 14:20		Feb-12-19 14:41	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202
Toluene		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202
Ethylbenzene		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202
m,p-Xylenes		<0.00401	0.00401	<0.00398	0.00398	<0.00400	0.00400	<0.00402	0.00402	<0.00398	0.00398	<0.00403	0.00403
o-Xylene		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202
Total Xylenes		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202
Total BTEX		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202
Inorganic Anions by EPA 300	*Extracted:*	Feb-08-19 08:30		Feb-08-19 08:30		Feb-08-19 08:30		Feb-08-19 08:30		Feb-08-19 08:30		Feb-08-19 08:30	
	Analyzed:	Feb-08-19 10:55		Feb-08-19 11:41		Feb-08-19 11:47		Feb-08-19 11:53		Feb-08-19 11:59		Feb-08-19 12:06	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<5.00	5.00	197	4.97	41.7	4.96	<4.99	4.99	7.85	4.98	<4.96	4.96
TPH by SW8015 Mod	*Extracted:*	Feb-07-19 16:00		Feb-07-19 16:00		Feb-07-19 16:00		Feb-07-19 16:00		Feb-07-19 16:00		Feb-07-19 16:00	
	Analyzed:	Feb-08-19 01:12		Feb-08-19 01:32		Feb-08-19 02:31		Feb-08-19 02:51		Feb-08-19 03:11		Feb-08-19 03:31	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<14.9	14.9	42.1	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<14.9	14.9	17.1	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<14.9	14.9	59.2	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

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

Jessica Kramer
Project Assistant

Certificate of Analytical Results 613489

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**BH01**	Matrix:	Soil	Date Received:	02.05.19 13.09
Lab Sample Id:	613489-001	Date Collected:	01.29.19 12.40	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.08.19 08.30	Basis:	Wet Weight
Seq Number:	3078505				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	02.08.19 10.55	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.07.19 16.00	Basis:	Wet Weight
Seq Number:	3078443				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.08.19 01.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	02.08.19 01.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	02.08.19 01.12	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	02.08.19 01.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	02.08.19 01.12	
o-Terphenyl	84-15-1	96	%	70-135	02.08.19 01.12	

Certificate of Analytical Results 613489

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**BH01**	Matrix:	Soil	Date Received:	02.05.19 13.09
Lab Sample Id:	613489-001	Date Collected:	01.29.19 12.40	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.08.19 15.00	Basis:	Wet Weight
Seq Number:	3078719				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.11.19 16.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.11.19 16.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.11.19 16.04	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.11.19 16.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.11.19 16.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.11.19 16.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.11.19 16.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	90	%	70-130	02.11.19 16.04	
4-Bromofluorobenzene	460-00-4	88	%	70-130	02.11.19 16.04	

Certificate of Analytical Results 613489

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**BH02**	Matrix:	Soil	Date Received:	02.05.19 13.09
Lab Sample Id:	613489-002	Date Collected:	01.29.19 13.25	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.08.19 08.30	Basis:	Wet Weight
Seq Number:	3078505				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**197**	4.97	mg/kg	02.08.19 11.41		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.07.19 16.00	Basis:	Wet Weight
Seq Number:	3078443				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.08.19 01.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	**42.1**	15.0	mg/kg	02.08.19 01.32		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**17.1**	15.0	mg/kg	02.08.19 01.32		1
Total TPH	PHC635	**59.2**	15.0	mg/kg	02.08.19 01.32		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.08.19 01.32	
o-Terphenyl	84-15-1	95	%	70-135	02.08.19 01.32	

Certificate of Analytical Results 613489

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**BH02**	Matrix:	Soil	Date Received:	02.05.19 13.09
Lab Sample Id:	613489-002	Date Collected:	01.29.19 13.25	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.08.19 15.00	Basis:	Wet Weight
Seq Number:	3078719				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.11.19 16.25	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.11.19 16.25	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.11.19 16.25	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.11.19 16.25	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.11.19 16.25	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.11.19 16.25	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.11.19 16.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	86	%	70-130	02.11.19 16.25	
1,4-Difluorobenzene	540-36-3	88	%	70-130	02.11.19 16.25	

Certificate of Analytical Results 613489

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**BH03**	Matrix:	Soil	Date Received:	02.05.19 13.09
Lab Sample Id:	613489-003	Date Collected:	01.29.19 14.15	Sample Depth:	3 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.08.19 08.30	Basis:	Wet Weight
Seq Number:	3078505				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**41.7**	4.96	mg/kg	02.08.19 11.47		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.07.19 16.00	Basis:	Wet Weight
Seq Number:	3078443				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.08.19 02.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.08.19 02.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.08.19 02.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.08.19 02.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	02.08.19 02.31	
o-Terphenyl	84-15-1	108	%	70-135	02.08.19 02.31	

Certificate of Analytical Results 613489

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**BH03**	Matrix:	Soil	Date Received:	02.05.19 13.09
Lab Sample Id:	613489-003	Date Collected:	01.29.19 14.15	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.08.19 15.00	Basis:	Wet Weight
Seq Number:	3078719				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.11.19 16.47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.11.19 16.47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.11.19 16.47	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.11.19 16.47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.11.19 16.47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.11.19 16.47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.11.19 16.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	90	%	70-130	02.11.19 16.47	
4-Bromofluorobenzene	460-00-4	81	%	70-130	02.11.19 16.47	

Certificate of Analytical Results 613489

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**BH01A**	Matrix:	Soil	Date Received:	02.05.19 13.09
Lab Sample Id:	613489-004	Date Collected:	01.29.19 12.25	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.08.19 08.30	Basis:	Wet Weight
Seq Number:	3078505				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	02.08.19 11.53	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.07.19 16.00	Basis:	Wet Weight
Seq Number:	3078443				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.08.19 02.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.08.19 02.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.08.19 02.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.08.19 02.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	02.08.19 02.51	
o-Terphenyl	84-15-1	99	%	70-135	02.08.19 02.51	

Certificate of Analytical Results 613489

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**BH01A**	Matrix:	Soil	Date Received:	02.05.19 13.09
Lab Sample Id:	613489-004	Date Collected:	01.29.19 12.25	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.08.19 15.00	Basis:	Wet Weight
Seq Number:	3078719				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.11.19 17.07	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.11.19 17.07	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.11.19 17.07	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.11.19 17.07	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.11.19 17.07	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.11.19 17.07	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.11.19 17.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	95	%	70-130	02.11.19 17.07	
4-Bromofluorobenzene	460-00-4	80	%	70-130	02.11.19 17.07	

Certificate of Analytical Results 613489

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**BH02A**	Matrix:	Soil	Date Received:	02.05.19 13.09
Lab Sample Id:	613489-005	Date Collected:	01.29.19 13.40	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.08.19 08.30	Basis:	Wet Weight
Seq Number:	3078505				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7.85**	4.98	mg/kg	02.08.19 11.59		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.07.19 16.00	Basis:	Wet Weight
Seq Number:	3078443				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.08.19 03.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.08.19 03.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.08.19 03.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.08.19 03.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	02.08.19 03.11	
o-Terphenyl	84-15-1	94	%	70-135	02.08.19 03.11	

Certificate of Analytical Results 613489

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**BH02A**	Matrix:	Soil	Date Received:	02.05.19 13.09
Lab Sample Id:	613489-005	Date Collected:	01.29.19 13.40	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.11.19 17.00	Basis:	Wet Weight
Seq Number:	3078779				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.12.19 14.20	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.12.19 14.20	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.12.19 14.20	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.12.19 14.20	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.12.19 14.20	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.12.19 14.20	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.12.19 14.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	85	%	70-130	02.12.19 14.20	
1,4-Difluorobenzene	540-36-3	86	%	70-130	02.12.19 14.20	

Certificate of Analytical Results 613489

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**BH03A**	Matrix:	Soil	Date Received:	02.05.19 13.09
Lab Sample Id:	613489-006	Date Collected:	01.29.19 14.20	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.08.19 08.30	Basis:	Wet Weight
Seq Number:	3078505				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	02.08.19 12.06	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.07.19 16.00	Basis:	Wet Weight
Seq Number:	3078443				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.08.19 03.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.08.19 03.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.08.19 03.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.08.19 03.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	02.08.19 03.31	
o-Terphenyl	84-15-1	98	%	70-135	02.08.19 03.31	

Certificate of Analytical Results 613489

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**BH03A**	Matrix:	Soil	Date Received:	02.05.19 13.09
Lab Sample Id:	613489-006	Date Collected:	01.29.19 14.20	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.11.19 17.00	Basis:	Wet Weight
Seq Number:	3078779				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.12.19 14.41	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.12.19 14.41	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.12.19 14.41	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.12.19 14.41	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.12.19 14.41	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.12.19 14.41	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.12.19 14.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	88	%	70-130	02.12.19 14.41	
1,4-Difluorobenzene	540-36-3	93	%	70-130	02.12.19 14.41	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 613489

LT Environmental, Inc.

JRU-48

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3078505 — Matrix: Solid — Date Prep: 02.08.19
MB Sample Id: 7671375-1-BLK — LCS Sample Id: 7671375-1-BKS — LCSD Sample Id: 7671375-1-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	239	96	238	95	90-110	0	20	mg/kg	02.08.19 09:06	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3078505 — Matrix: Soil — Date Prep: 02.08.19
Parent Sample Id: 613423-013 — MS Sample Id: 613423-013 S — MSD Sample Id: 613423-013 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	25.8	248	295	109	276	101	90-110	7	20	mg/kg	02.08.19 09:24	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3078505 — Matrix: Soil — Date Prep: 02.08.19
Parent Sample Id: 613489-001 — MS Sample Id: 613489-001 S — MSD Sample Id: 613489-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	247	99	244	98	90-110	1	20	mg/kg	02.08.19 11:01	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3078443 — Matrix: Solid — Date Prep: 02.07.19
MB Sample Id: 7671316-1-BLK — LCS Sample Id: 7671316-1-BKS — LCSD Sample Id: 7671316-1-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	876	88	872	87	70-135	0	20	mg/kg	02.07.19 21:17	
Diesel Range Organics (DRO)	<8.13	1000	964	96	976	98	70-135	1	20	mg/kg	02.07.19 21:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		125		123		70-135	%	02.07.19 21:17
o-Terphenyl	99		118		126		70-135	%	02.07.19 21:17

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

QC Summary 613489

LT Environmental, Inc.

JRU-48

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3078443 | Matrix: Soil | Date Prep: 02.07.19
Parent Sample Id: 612618-076 | MS Sample Id: 612618-076 S | MSD Sample Id: 612618-076 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	856	86	830	83	70-135	3	20	mg/kg	02.07.19 22:16	
Diesel Range Organics (DRO)	<8.12	999	957	96	925	93	70-135	3	20	mg/kg	02.07.19 22:16	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		122		70-135	%	02.07.19 22:16
o-Terphenyl	121		124		70-135	%	02.07.19 22:16

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3078719 | Matrix: Solid | Date Prep: 02.08.19
MB Sample Id: 7671479-1-BLK | LCS Sample Id: 7671479-1-BKS | LCSD Sample Id: 7671479-1-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	0.119	119	0.117	116	70-130	2	35	mg/kg	02.11.19 09:17	
Toluene	<0.00200	0.0998	0.102	102	0.0998	99	70-130	2	35	mg/kg	02.11.19 09:17	
Ethylbenzene	<0.00200	0.0998	0.124	124	0.123	122	70-130	1	35	mg/kg	02.11.19 09:17	
m,p-Xylenes	<0.00399	0.200	0.244	122	0.243	121	70-130	0	35	mg/kg	02.11.19 09:17	
o-Xylene	<0.00200	0.0998	0.116	116	0.115	114	70-130	1	35	mg/kg	02.11.19 09:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		116		126		70-130	%	02.11.19 09:17
4-Bromofluorobenzene	84		96		87		70-130	%	02.11.19 09:17

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3078779 | Matrix: Solid | Date Prep: 02.08.19
MB Sample Id: 7671481-1-BLK | LCS Sample Id: 7671481-1-BKS | LCSD Sample Id: 7671481-1-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	0.0958	96	0.127	127	70-130	28	35	mg/kg	02.11.19 20:17	
Toluene	<0.00200	0.0998	0.0831	83	0.106	106	70-130	24	35	mg/kg	02.11.19 20:17	
Ethylbenzene	<0.00200	0.0998	0.0950	95	0.121	121	70-130	24	35	mg/kg	02.11.19 20:17	
m,p-Xylenes	<0.00399	0.200	0.178	89	0.234	117	70-130	27	35	mg/kg	02.11.19 20:17	
o-Xylene	<0.00200	0.0998	0.0848	85	0.110	110	70-130	26	35	mg/kg	02.11.19 20:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		107		117		70-130	%	02.11.19 20:17
4-Bromofluorobenzene	83		88		87		70-130	%	02.11.19 20:17

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]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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

Final 1.000

QC Summary 613489

LT Environmental, Inc.

JRU-48

Analytical Method: BTEX by EPA 8021B
Prep Method: SW5030B
Seq Number: 3078719
Matrix: Soil
Date Prep: 02.08.19
Parent Sample Id: 614002-001
MS Sample Id: 614002-001 S
MSD Sample Id: 614002-001 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	0.0970	97	0.0868	87	70-130	11	35	mg/kg	02.11.19 09:59	
Toluene	<0.00200	0.100	0.0853	85	0.0778	78	70-130	9	35	mg/kg	02.11.19 09:59	
Ethylbenzene	<0.00200	0.100	0.0878	88	0.0803	81	70-130	9	35	mg/kg	02.11.19 09:59	
m,p-Xylenes	<0.00401	0.200	0.165	83	0.147	74	70-130	12	35	mg/kg	02.11.19 09:59	
o-Xylene	<0.00200	0.100	0.0789	79	0.0731	74	70-130	8	35	mg/kg	02.11.19 09:59	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		107		70-130	%	02.11.19 09:59
4-Bromofluorobenzene	89		90		70-130	%	02.11.19 09:59

Analytical Method: BTEX by EPA 8021B
Prep Method: SW5030B
Seq Number: 3078779
Matrix: Soil
Date Prep: 02.08.19
Parent Sample Id: 614004-001
MS Sample Id: 614004-001 S
MSD Sample Id: 614004-001 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	0.113	112	0.115	114	70-130	2	35	mg/kg	02.11.19 21:01	
Toluene	<0.00202	0.101	0.0872	86	0.0903	89	70-130	3	35	mg/kg	02.11.19 21:01	
Ethylbenzene	<0.00202	0.101	0.0961	95	0.0990	98	70-130	3	35	mg/kg	02.11.19 21:01	
m,p-Xylenes	<0.00403	0.202	0.186	92	0.184	92	70-130	1	35	mg/kg	02.11.19 21:01	
o-Xylene	<0.00202	0.101	0.104	103	0.109	108	70-130	5	35	mg/kg	02.11.19 21:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		119		70-130	%	02.11.19 21:01
4-Bromofluorobenzene	77		90		70-130	%	02.11.19 21:01

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

Chain of Custody

Work Order No: 613489

XENCO LABORATORIES

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

www.xenco.com Page 1 of 1

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Phone:	432.704.5178	Email:	rmcafee@ltenv.com

Work Order Comments

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

Project Name:	JRU-48	Turn Around	
Project Number:	01291803Z	Routine	☑
P.O. Number:	2RP-1142 2RP-2556	Rush:	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.3/0.2	Thermometer ID	126
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.1
Sample Custody Seals:	Yes (No) N/A	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
BH01	S	1/29/19	1240	2'	1	X	X	X
BH02			1325	1'		X	X	X
BH03			1415	3'		X	X	X
BH01A			1225	4'		X	X	X
BH02A			1340	4'		X	X	X
BH03A			1420	4'		X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

discrete

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time		Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Robert McAfee		01/01/19 @16:00	2		2/5/19 1239	2/1/19 15:30
3				4			
5				6			

Revised Date 051418 Rev. 2018.1

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

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 02/05/2019 01:09:00 PM

Work Order #: 613489

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 Date: 02/05/2019
Brianna Teel

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

Analytical Report 614274

for

LT Environmental, Inc.

Project Manager: Adrian Baker

JRU-48

0912918032

13-FEB-19

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

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

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

13-FEB-19

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

Reference: XENCO Report No(s): **614274**
JRU-48
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) 614274. 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. 614274 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 614274

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW02	S	02-08-19 15:50	0 - 4 ft	614274-001

Version: 1.%

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU-48

Project ID: *0912918032*
Work Order Number(s): *614274*

Report Date: *13-FEB-19*
Date Received: *02/12/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3078987 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3078993 TPH by SW8015 Mod
Diesel Range Organics (DRO), Gasoline Range Hydrocarbons (GRO) RPD was outside laboratory control limits.
Samples in the analytical batch are: 614274-001

Analyst spiked the LCS at the concentration of a CCV in error causing the RPD to be out.

Certificate of Analysis Summary 614274

LT Environmental, Inc., Arvada, CO

Project Name: JRU-48

Project Id: 0912918032
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Tue Feb-12-19 12:35 pm
Report Date: 13-FEB-19
Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	614274-001					
	Field Id:	SW02					
	Depth:	0-4 ft					
	Matrix:	SOIL					
	Sampled:	Feb-08-19 15:50					
BTEX by EPA 8021B	***Extracted:***	Feb-12-19 15:00					
	Analyzed:	Feb-13-19 14:44					
	Units/RL:	mg/kg	RL				
Benzene		<0.00200	0.00200				
Toluene		<0.00200	0.00200				
Ethylbenzene		0.00342	0.00200				
m,p-Xylenes		<0.00401	0.00401				
o-Xylene		0.0115	0.00200				
Total Xylenes		0.0115	0.00200				
Total BTEX		0.0149	0.00200				
Inorganic Anions by EPA 300	***Extracted:***	Feb-12-19 13:00					
	Analyzed:	Feb-12-19 22:27					
	Units/RL:	mg/kg	RL				
Chloride		1040	5.00				
TPH by SW8015 Mod	***Extracted:***	** ** ** **					
	Analyzed:	Feb-12-19 17:58					
	Units/RL:	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		24.5	15.0				
Diesel Range Organics (DRO)		1070	15.0				
Motor Oil Range Hydrocarbons (MRO)		202	15.0				
Total TPH		1300	15.0				

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

Version: 1.%

Jessica Kramer
Project Assistant

Final 1.000

Certificate of Analytical Results 614274

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	02.12.19 12.35
Lab Sample Id:	614274-001	Date Collected:	02.08.19 15.50	Sample Depth:	0 - 4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.12.19 13.00	Basis:	Wet Weight
Seq Number:	3078918				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1040**	5.00	mg/kg	02.12.19 22.27		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.12.19 12.00	Basis:	Wet Weight
Seq Number:	3078993				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**24.5**	15.0	mg/kg	02.12.19 17.58		1
Diesel Range Organics (DRO)	C10C28DRO	**1070**	15.0	mg/kg	02.12.19 17.58		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**202**	15.0	mg/kg	02.12.19 17.58		1
Total TPH	PHC635	**1300**	15.0	mg/kg	02.12.19 17.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.12.19 17.58	
o-Terphenyl	84-15-1	111	%	70-135	02.12.19 17.58	

Certificate of Analytical Results 614274

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	02.12.19 12.35
Lab Sample Id:	614274-001	Date Collected:	02.08.19 15.50	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.12.19 15.00	Basis:	Wet Weight
Seq Number:	3078987				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.13.19 14.44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.13.19 14.44	U	1
Ethylbenzene	100-41-4	**0.00342**	0.00200	mg/kg	02.13.19 14.44		1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.13.19 14.44	U	1
o-Xylene	95-47-6	**0.0115**	0.00200	mg/kg	02.13.19 14.44		1
Total Xylenes	1330-20-7	**0.0115**	0.00200	mg/kg	02.13.19 14.44		1
Total BTEX		**0.0149**	0.00200	mg/kg	02.13.19 14.44		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	70-130	02.13.19 14.44	
1,4-Difluorobenzene	540-36-3	86	%	70-130	02.13.19 14.44	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 614274

LT Environmental, Inc.

JRU-48

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3078918 — Matrix: Solid — Date Prep: 02.12.19
MB Sample Id: 7671595-1-BLK — LCS Sample Id: 7671595-1-BKS — LCSD Sample Id: 7671595-1-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	236	94	90-110	2	20	mg/kg	02.12.19 19:21	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3078918 — Matrix: Soil — Date Prep: 02.12.19
Parent Sample Id: 613787-003 — MS Sample Id: 613787-003 S — MSD Sample Id: 613787-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10.8	248	254	98	268	104	90-110	5	20	mg/kg	02.12.19 19:40	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3078918 — Matrix: Soil — Date Prep: 02.12.19
Parent Sample Id: 614223-001 — MS Sample Id: 614223-001 S — MSD Sample Id: 614223-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	12.6	250	278	106	267	102	90-110	4	20	mg/kg	02.12.19 21:10	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3078993 — Matrix: Solid — Date Prep: 02.12.19
MB Sample Id: 7671664-1-BLK — LCS Sample Id: 7671664-1-BKS — LCSD Sample Id: 7671664-1-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	500	452	90	907	91	70-135	67	20	mg/kg	02.12.19 12:22	F
Diesel Range Organics (DRO)	<8.13	500	450	90	925	93	70-135	69	20	mg/kg	02.12.19 12:22	F

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		103		124		70-135	%	02.12.19 12:22
o-Terphenyl	100		96		120		70-135	%	02.12.19 12:22

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

QC Summary 614274

LT Environmental, Inc.

JRU-48

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3078993 | Matrix: Soil | Date Prep: 02.12.19
Parent Sample Id: 614005-001 | MS Sample Id: 614005-001 S | MSD Sample Id: 614005-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	908	91	968	97	70-135	6	20	mg/kg	02.12.19 13:21	
Diesel Range Organics (DRO)	<8.11	998	962	96	986	99	70-135	2	20	mg/kg	02.12.19 13:21	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		128		70-135	%	02.12.19 13:21
o-Terphenyl	123		123		70-135	%	02.12.19 13:21

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3078987 | Matrix: Solid | Date Prep: 02.12.19
MB Sample Id: 7671681-1-BLK | LCS Sample Id: 7671681-1-BKS | LCSD Sample Id: 7671681-1-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	0.125	125	0.127	126	70-130	2	35	mg/kg	02.13.19 09:22	
Toluene	<0.00200	0.0998	0.102	102	0.103	102	70-130	1	35	mg/kg	02.13.19 09:22	
Ethylbenzene	<0.00200	0.0998	0.116	116	0.113	112	70-130	3	35	mg/kg	02.13.19 09:22	
m,p-Xylenes	<0.00399	0.200	0.232	116	0.232	115	70-130	0	35	mg/kg	02.13.19 09:22	
o-Xylene	<0.00200	0.0998	0.109	109	0.107	106	70-130	2	35	mg/kg	02.13.19 09:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		128		128		70-130	%	02.13.19 09:22
4-Bromofluorobenzene	86		86		89		70-130	%	02.13.19 09:22

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3078987 | Matrix: Soil | Date Prep: 02.12.19
Parent Sample Id: 613652-001 | MS Sample Id: 613652-001 S | MSD Sample Id: 613652-001 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	0.115	114	0.128	128	70-130	11	35	mg/kg	02.13.19 10:06	
Toluene	<0.00202	0.101	0.0914	90	0.101	101	70-130	10	35	mg/kg	02.13.19 10:06	
Ethylbenzene	<0.00202	0.101	0.0962	95	0.111	111	70-130	14	35	mg/kg	02.13.19 10:06	
m,p-Xylenes	<0.00403	0.202	0.199	99	0.226	113	70-130	13	35	mg/kg	02.13.19 10:06	
o-Xylene	<0.00202	0.101	0.0902	89	0.103	103	70-130	13	35	mg/kg	02.13.19 10:06	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		106		70-130	%	02.13.19 10:06
4-Bromofluorobenzene	87		78		70-130	%	02.13.19 10:06

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

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

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

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

Final 1.000

XENCO LABORATORIES

Chain of Custody

Work Order No: 614274

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 ______ of ______

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

Work Order Comments

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

Project Name:	JRU-48	**Turn Around**	
Project Number:	012918032	Routine ☐	
P.O. Number:	2RP-4142 2RP-2556	Rush:	2 day
Sampler's Name:	Robert McAfee	Due Date:	02/13/19

SAMPLE RECEIPT	Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.2/0.2		Thermometer ID:	Pe
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes (No) N/A		Correction Factor:	-0.1
Sample Custody Seals:	Yes (No) N/A		Total Containers:	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Sample Comments
SW02	S	02/08/19	1550	0-4'	1	X	X	X	Composite

Work Order Notes

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

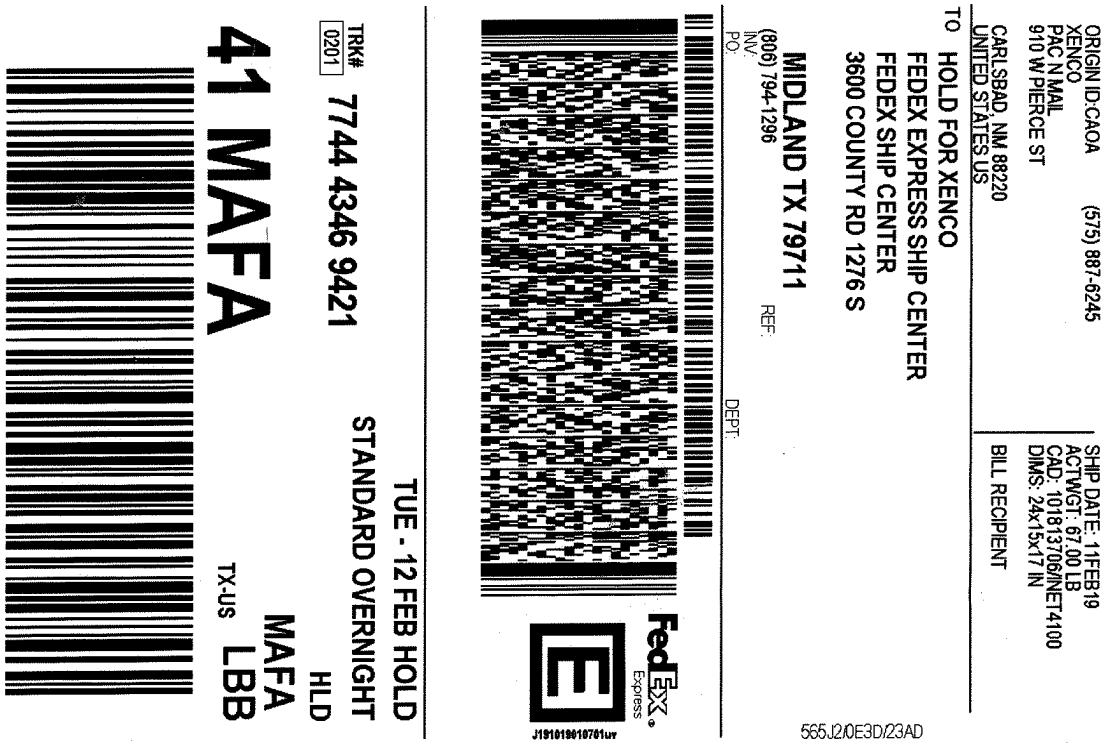
Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time		Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	[signature]	Timothy P. Elliott	02/11/2019 10:18	2	[signature]	[signature]	2/11/19 1235
3				4			
5				6			

Revised Date 051418 Rev. 2018.1



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

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 02/12/2019 12:35:00 PM

Work Order #: 614274

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 Date: 02/12/2019
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 02/12/2019
Jessica Kramer

Analytical Report 614288

for

LT Environmental, Inc.

Project Manager: Adrian Baker

JRU-48

012918032

18-FEB-19

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

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

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

18-FEB-19

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

Reference: XENCO Report No(s): **614288**
JRU-48
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) 614288. 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. 614288 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 614288

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	02-08-19 11:00	4.5 ft	614288-001
FS02	S	02-07-19 10:10	4.5 ft	614288-002
FS03	S	02-07-19 10:05	4 ft	614288-003
FS04	S	02-07-19 09:30	4 ft	614288-004
FS05	S	02-07-19 09:20	4 ft	614288-005
SW01	S	02-07-19 10:15	0 - 4 ft	614288-006
SW03	S	02-07-19 11:15	0 - 3 ft	614288-007
SW04	S	02-07-19 09:15	0 - 4 ft	614288-008
SW05	S	02-07-19 12:15	0 - 4 ft	614288-009
SW06	S	02-07-19 10:00	0 - 4 ft	614288-010
SW07	S	02-07-19 09:10	0 - 4 ft	614288-011

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU-48

Project ID: *012918032*
Work Order Number(s): *614288*

Report Date: *18-FEB-19*
Date Received: *02/12/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3079094 TPH by SW8015 Mod
Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected;
Samples affected are: 614288-006.

Batch: LBA-3079312 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 614288-001,614288-004.
Surrogate 1,4-Difluorobenzene, Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 614288-006.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3079389 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 614288

LT Environmental, Inc., Arvada, CO

Project Name: JRU-48

Project Id: 012918032
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Tue Feb-12-19 12:30 pm
Report Date: 18-FEB-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	614288-001		614288-002		614288-003		614288-004		614288-005		614288-006	
	Field Id:	FS01		FS02		FS03		FS04		FS05		SW01	
	Depth:	4.5- ft		4.5- ft		4- ft		4- ft		4- ft		0-4 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-08-19 11:00		Feb-07-19 10:10		Feb-07-19 10:05		Feb-07-19 09:30		Feb-07-19 09:20		Feb-07-19 10:15	
BTEX by EPA 8021B	***Extracted:***	Feb-14-19 15:00		Feb-14-19 15:00		Feb-14-19 15:00		Feb-14-19 15:00		Feb-14-19 15:00		Feb-14-19 15:00	
	Analyzed:	Feb-15-19 15:52		Feb-15-19 18:41		Feb-15-19 19:00		Feb-15-19 19:19		Feb-15-19 19:38		Feb-15-19 18:03	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00199	0.00199	<0.00202	0.00202	<0.00199	0.00199	0.0447	0.00200	0.0545	0.00200	0.0268	0.00200
Toluene		<0.00199	0.00199	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	3.34 D	0.100
Ethylbenzene		<0.00199	0.00199	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	0.206	0.00200
m,p-Xylenes		<0.00398	0.00398	<0.00403	0.00403	<0.00398	0.00398	0.00408	0.00400	0.0129	0.00400	0.266	0.00401
o-Xylene		0.0102	0.00199	0.00553	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	6.60 D	0.100
Total Xylenes		0.0102	0.00199	0.00553	0.00202	<0.00199	0.00199	0.00408	0.00200	0.0129	0.00200	6.87	0.00401
Total BTEX		0.0102	0.00199	0.00553	0.00202	<0.00199	0.00199	0.0488	0.00200	0.0674	0.00200	10.4	0.00200
Inorganic Anions by EPA 300	***Extracted:***	Feb-13-19 14:00		Feb-13-19 14:00		Feb-13-19 14:00		Feb-13-19 14:00		Feb-13-19 14:00		Feb-13-19 14:00	
	Analyzed:	Feb-13-19 16:59		Feb-13-19 17:09		Feb-13-19 17:18		Feb-13-19 18:07		Feb-13-19 18:16		Feb-13-19 18:45	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1700	25.0	535	5.00	301	4.96	214	4.99	40.8	4.98	235	4.95
TPH by SW8015 Mod	***Extracted:***	Feb-13-19 11:00		Feb-13-19 11:00		Feb-13-19 11:00		Feb-13-19 11:00		Feb-13-19 11:00		Feb-13-19 11:00	
	Analyzed:	Feb-13-19 14:13		Feb-13-19 14:33		Feb-13-19 14:53		Feb-13-19 15:13		Feb-13-19 15:32		Feb-13-19 15:52	
	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	<15.0	15.0	<15.0	15.0	1610	74.9
Diesel Range Organics (DRO)		101	15.0	284	14.9	250	15.0	288	15.0	<15.0	15.0	8740	74.9
Motor Oil Range Hydrocarbons (MRO)		18.5	15.0	68.3	14.9	72.9	15.0	90.9	15.0	<15.0	15.0	1420	74.9
Total TPH		120	15.0	352	14.9	323	15.0	379	15.0	<15.0	15.0	11800	74.9

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

Jessica Kramer
Project Assistant

Final 1.000

Certificate of Analysis Summary 614288

LT Environmental, Inc., Arvada, CO

Project Name: JRU-48

Project Id: 012918032
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Tue Feb-12-19 12:30 pm
Report Date: 18-FEB-19
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	614288-007		614288-008		614288-009		614288-010		614288-011	
	Field Id:	SW03		SW04		SW05		SW06		SW07	
	Depth:	0-3 ft		0-4 ft		0-4 ft		0-4 ft		0-4 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-07-19 11:15		Feb-07-19 09:15		Feb-07-19 12:15		Feb-07-19 10:00		Feb-07-19 09:10	
BTEX by EPA 8021B	*Extracted:*	Feb-14-19 15:00		Feb-15-19 13:00		Feb-15-19 13:00		Feb-15-19 13:00		Feb-15-19 13:00	
	Analyzed:	Feb-15-19 18:22		Feb-16-19 04:07		Feb-16-19 04:26		Feb-16-19 04:45		Feb-16-19 05:04	
	Units/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	<0.00200	0.00200	<0.00199	0.00199
Toluene		0.00483	0.00200	0.0220	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
Ethylbenzene		<0.00200	0.00200	0.00989	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
m,p-Xylenes		<0.00399	0.00399	0.0113	0.00398	<0.00399	0.00399	<0.00401	0.00401	<0.00398	0.00398
o-Xylene		0.00951	0.00200	0.0540	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
Total Xylenes		0.00951	0.00200	0.0653	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
Total BTEX		0.0143	0.00200	0.0972	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
Inorganic Anions by EPA 300	*Extracted:*	Feb-13-19 14:00		Feb-13-19 14:00		Feb-13-19 14:00		Feb-13-19 14:00		Feb-13-19 14:00	
	Analyzed:	Feb-13-19 18:55		Feb-13-19 19:04		Feb-13-19 19:14		Feb-13-19 19:24		Feb-13-19 17:28	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		742	4.99	122	5.01	254	4.95	314	4.99	333	4.95
TPH by SW8015 Mod	*Extracted:*	Feb-13-19 11:00		Feb-13-19 11:00		Feb-13-19 11:00		Feb-14-19 17:00		Feb-14-19 17:00	
	Analyzed:	Feb-13-19 16:12		Feb-13-19 16:31		Feb-13-19 16:51		Feb-15-19 02:26		Feb-15-19 02:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9	79.1	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		18.1	14.9	1790	15.0	<15.0	15.0	<15.0	15.0	44.7	15.0
Motor Oil Range Hydrocarbons (MRO)		<14.9	14.9	408	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		18.1	14.9	2280	15.0	<15.0	15.0	<15.0	15.0	44.7	15.0

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

Jessica Kramer
Project Assistant

Final 1.000

Certificate of Analytical Results 614288

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-001	Date Collected:	02.08.19 11.00	Sample Depth:	4.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.13.19 14.00	Basis:	Wet Weight
Seq Number:	3079119				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1700**	25.0	mg/kg	02.13.19 16.59		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.13.19 11.00	Basis:	Wet Weight
Seq Number:	3079094				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.13.19 14.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	**101**	15.0	mg/kg	02.13.19 14.13		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**18.5**	15.0	mg/kg	02.13.19 14.13		1
Total TPH	PHC635	**120**	15.0	mg/kg	02.13.19 14.13		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	02.13.19 14.13	
o-Terphenyl	84-15-1	100	%	70-135	02.13.19 14.13	

Certificate of Analytical Results 614288

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-001	Date Collected:	02.08.19 11.00	Sample Depth:	4.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.14.19 15.00	Basis:	Wet Weight
Seq Number:	3079312				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.15.19 15.52	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.15.19 15.52	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.15.19 15.52	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.15.19 15.52	U	1
o-Xylene	95-47-6	**0.0102**	0.00199	mg/kg	02.15.19 15.52		1
Total Xylenes	1330-20-7	**0.0102**	0.00199	mg/kg	02.15.19 15.52		1
Total BTEX		**0.0102**	0.00199	mg/kg	02.15.19 15.52		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	63	%	70-130	02.15.19 15.52	**
1,4-Difluorobenzene	540-36-3	86	%	70-130	02.15.19 15.52	

Certificate of Analytical Results 614288

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-002	Date Collected:	02.07.19 10.10	Sample Depth:	4.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.13.19 14.00	Basis:	Wet Weight
Seq Number:	3079119				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**535**	5.00	mg/kg	02.13.19 17.09		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.13.19 11.00	Basis:	Wet Weight
Seq Number:	3079094				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.13.19 14.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	**284**	14.9	mg/kg	02.13.19 14.33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**68.3**	14.9	mg/kg	02.13.19 14.33		1
Total TPH	PHC635	**352**	14.9	mg/kg	02.13.19 14.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.13.19 14.33	
o-Terphenyl	84-15-1	99	%	70-135	02.13.19 14.33	

Certificate of Analytical Results 614288

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-002	Date Collected:	02.07.19 10.10	Sample Depth:	4.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.14.19 15.00	Basis:	Wet Weight
Seq Number:	3079312				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.15.19 18.41	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.15.19 18.41	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.15.19 18.41	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.15.19 18.41	U	1
o-Xylene	95-47-6	**0.00553**	0.00202	mg/kg	02.15.19 18.41		1
Total Xylenes	1330-20-7	**0.00553**	0.00202	mg/kg	02.15.19 18.41		1
Total BTEX		**0.00553**	0.00202	mg/kg	02.15.19 18.41		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	76	%	70-130	02.15.19 18.41	
1,4-Difluorobenzene	540-36-3	86	%	70-130	02.15.19 18.41	

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Sample Id:	**FS03**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-003	Date Collected:	02.07.19 10.05	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.13.19 14.00	Basis:	Wet Weight
Seq Number:	3079119				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**301**	4.96	mg/kg	02.13.19 17.18		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.13.19 11.00	Basis:	Wet Weight
Seq Number:	3079094				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.13.19 14.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	**250**	15.0	mg/kg	02.13.19 14.53		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**72.9**	15.0	mg/kg	02.13.19 14.53		1
Total TPH	PHC635	**323**	15.0	mg/kg	02.13.19 14.53		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	02.13.19 14.53	
o-Terphenyl	84-15-1	103	%	70-135	02.13.19 14.53	

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LT Environmental, Inc., Arvada, CO

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Sample Id:	**FS03**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-003	Date Collected:	02.07.19 10.05	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.14.19 15.00	Basis:	Wet Weight
Seq Number:	3079312				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.15.19 19.00	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.15.19 19.00	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.15.19 19.00	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.15.19 19.00	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.15.19 19.00	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.15.19 19.00	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.15.19 19.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	70	%	70-130	02.15.19 19.00	
1,4-Difluorobenzene	540-36-3	91	%	70-130	02.15.19 19.00	

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Sample Id:	**FS04**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-004	Date Collected:	02.07.19 09.30	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.13.19 14.00	Basis:	Wet Weight
Seq Number:	3079119				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**214**	4.99	mg/kg	02.13.19 18.07		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.13.19 11.00	Basis:	Wet Weight
Seq Number:	3079094				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.13.19 15.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	**288**	15.0	mg/kg	02.13.19 15.13		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**90.9**	15.0	mg/kg	02.13.19 15.13		1
Total TPH	PHC635	**379**	15.0	mg/kg	02.13.19 15.13		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.13.19 15.13	
o-Terphenyl	84-15-1	97	%	70-135	02.13.19 15.13	

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Sample Id:	**FS04**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-004	Date Collected:	02.07.19 09.30	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.14.19 15.00	Basis:	Wet Weight
Seq Number:	3079312				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.0447**	0.00200	mg/kg	02.15.19 19.19		1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.15.19 19.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.15.19 19.19	U	1
m,p-Xylenes	179601-23-1	**0.00408**	0.00400	mg/kg	02.15.19 19.19		1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.15.19 19.19	U	1
Total Xylenes	1330-20-7	**0.00408**	0.00200	mg/kg	02.15.19 19.19		1
Total BTEX		**0.0488**	0.00200	mg/kg	02.15.19 19.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	55	%	70-130	02.15.19 19.19	**
1,4-Difluorobenzene	540-36-3	86	%	70-130	02.15.19 19.19	

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Sample Id:	**FS05**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-005	Date Collected:	02.07.19 09.20	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.13.19 14.00	Basis:	Wet Weight
Seq Number:	3079119				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**40.8**	4.98	mg/kg	02.13.19 18.16		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.13.19 11.00	Basis:	Wet Weight
Seq Number:	3079094				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.13.19 15.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.13.19 15.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.13.19 15.32	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.13.19 15.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	02.13.19 15.32	
o-Terphenyl	84-15-1	97	%	70-135	02.13.19 15.32	

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Sample Id:	**FS05**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-005	Date Collected:	02.07.19 09.20	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.14.19 15.00	Basis:	Wet Weight
Seq Number:	3079312				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.0545**	0.00200	mg/kg	02.15.19 19.38		1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.15.19 19.38	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.15.19 19.38	U	1
m,p-Xylenes	179601-23-1	**0.0129**	0.00400	mg/kg	02.15.19 19.38		1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.15.19 19.38	U	1
Total Xylenes	1330-20-7	**0.0129**	0.00200	mg/kg	02.15.19 19.38		1
Total BTEX		**0.0674**	0.00200	mg/kg	02.15.19 19.38		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	02.15.19 19.38	
1,4-Difluorobenzene	540-36-3	102	%	70-130	02.15.19 19.38	

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Sample Id:	**SW01**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-006	Date Collected:	02.07.19 10.15	Sample Depth:	0 - 4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.13.19 14.00	Basis:	Wet Weight
Seq Number:	3079119				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**235**	4.95	mg/kg	02.13.19 18.45		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.13.19 11.00	Basis:	Wet Weight
Seq Number:	3079094				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**1610**	74.9	mg/kg	02.13.19 15.52		5
Diesel Range Organics (DRO)	C10C28DRO	**8740**	74.9	mg/kg	02.13.19 15.52		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**1420**	74.9	mg/kg	02.13.19 15.52		5
Total TPH	PHC635	**11800**	74.9	mg/kg	02.13.19 15.52		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	02.13.19 15.52	
o-Terphenyl	84-15-1	206	%	70-135	02.13.19 15.52	**

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Sample Id:	**SW01**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-006	Date Collected:	02.07.19 10.15	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.14.19 15.00	Basis:	Wet Weight
Seq Number:	3079312				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.0268**	0.00200	mg/kg	02.15.19 18.03		1
Toluene	108-88-3	**3.34**	0.100	mg/kg	02.18.19 00.16	D	50
Ethylbenzene	100-41-4	**0.206**	0.00200	mg/kg	02.15.19 18.03		1
m,p-Xylenes	179601-23-1	**0.266**	0.00401	mg/kg	02.15.19 18.03		1
o-Xylene	95-47-6	**6.60**	0.100	mg/kg	02.18.19 00.16	D	50
Total Xylenes	1330-20-7	**6.87**	0.00401	mg/kg	02.18.19 00.16		50
Total BTEX		**10.4**	0.00200	mg/kg	02.18.19 00.16		50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	152	%	70-130	02.15.19 18.03	**
4-Bromofluorobenzene	460-00-4	900	%	70-130	02.15.19 18.03	**

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Sample Id:	**SW03**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-007	Date Collected:	02.07.19 11.15	Sample Depth:	0 - 3 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.13.19 14.00	Basis:	Wet Weight
Seq Number:	3079119				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**742**	4.99	mg/kg	02.13.19 18.55		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.13.19 11.00	Basis:	Wet Weight
Seq Number:	3079094				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.13.19 16.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	**18.1**	14.9	mg/kg	02.13.19 16.12		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	02.13.19 16.12	U	1
Total TPH	PHC635	**18.1**	14.9	mg/kg	02.13.19 16.12		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.13.19 16.12	
o-Terphenyl	84-15-1	96	%	70-135	02.13.19 16.12	

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Sample Id:	**SW03**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-007	Date Collected:	02.07.19 11.15	Sample Depth:	0 - 3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.14.19 15.00	Basis:	Wet Weight
Seq Number:	3079312				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.15.19 18.22	U	1
Toluene	108-88-3	**0.00483**	0.00200	mg/kg	02.15.19 18.22		1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.15.19 18.22	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.15.19 18.22	U	1
o-Xylene	95-47-6	**0.00951**	0.00200	mg/kg	02.15.19 18.22		1
Total Xylenes	1330-20-7	**0.00951**	0.00200	mg/kg	02.15.19 18.22		1
Total BTEX		**0.0143**	0.00200	mg/kg	02.15.19 18.22		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	88	%	70-130	02.15.19 18.22	
4-Bromofluorobenzene	460-00-4	112	%	70-130	02.15.19 18.22	

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Sample Id:	**SW04**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-008	Date Collected:	02.07.19 09.15	Sample Depth:	0 - 4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.13.19 14.00	Basis:	Wet Weight
Seq Number:	3079119				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**122**	5.01	mg/kg	02.13.19 19.04		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.13.19 11.00	Basis:	Wet Weight
Seq Number:	3079094				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**79.1**	15.0	mg/kg	02.13.19 16.31		1
Diesel Range Organics (DRO)	C10C28DRO	**1790**	15.0	mg/kg	02.13.19 16.31		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**408**	15.0	mg/kg	02.13.19 16.31		1
Total TPH	PHC635	**2280**	15.0	mg/kg	02.13.19 16.31		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	02.13.19 16.31	
o-Terphenyl	84-15-1	108	%	70-135	02.13.19 16.31	

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Sample Id:	**SW04**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-008	Date Collected:	02.07.19 09.15	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.15.19 13.00	Basis:	Wet Weight
Seq Number:	3079389				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.16.19 04.07	U	1
Toluene	108-88-3	**0.0220**	0.00199	mg/kg	02.16.19 04.07		1
Ethylbenzene	100-41-4	**0.00989**	0.00199	mg/kg	02.16.19 04.07		1
m,p-Xylenes	179601-23-1	**0.0113**	0.00398	mg/kg	02.16.19 04.07		1
o-Xylene	95-47-6	**0.0540**	0.00199	mg/kg	02.16.19 04.07		1
Total Xylenes	1330-20-7	**0.0653**	0.00199	mg/kg	02.16.19 04.07		1
Total BTEX		**0.0972**	0.00199	mg/kg	02.16.19 04.07		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	70-130	02.16.19 04.07	
1,4-Difluorobenzene	540-36-3	106	%	70-130	02.16.19 04.07	

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Sample Id:	**SW05**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-009	Date Collected:	02.07.19 12.15	Sample Depth:	0 - 4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.13.19 14.00	Basis:	Wet Weight
Seq Number:	3079119				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**254**	4.95	mg/kg	02.13.19 19.14		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.13.19 11.00	Basis:	Wet Weight
Seq Number:	3079094				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.13.19 16.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.13.19 16.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.13.19 16.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.13.19 16.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	02.13.19 16.51	
o-Terphenyl	84-15-1	98	%	70-135	02.13.19 16.51	

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Sample Id:	**SW05**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-009	Date Collected:	02.07.19 12.15	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.15.19 13.00	Basis:	Wet Weight
Seq Number:	3079389				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.16.19 04.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.16.19 04.26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.16.19 04.26	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.16.19 04.26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.16.19 04.26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.16.19 04.26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.16.19 04.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	02.16.19 04.26	
1,4-Difluorobenzene	540-36-3	116	%	70-130	02.16.19 04.26	

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JRU-48

Sample Id:	**SW06**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-010	Date Collected:	02.07.19 10.00	Sample Depth:	0 - 4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.13.19 14.00	Basis:	Wet Weight
Seq Number:	3079119				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**314**	4.99	mg/kg	02.13.19 19.24		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.14.19 17.00	Basis:	Wet Weight
Seq Number:	3079290				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.15.19 02.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.15.19 02.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.15.19 02.26	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.15.19 02.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	02.15.19 02.26	
o-Terphenyl	84-15-1	90	%	70-135	02.15.19 02.26	

Certificate of Analytical Results 614288

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**SW06**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-010	Date Collected:	02.07.19 10.00	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.15.19 13.00	Basis:	Wet Weight
Seq Number:	3079389				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.16.19 04.45	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.16.19 04.45	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.16.19 04.45	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.16.19 04.45	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.16.19 04.45	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.16.19 04.45	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.16.19 04.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	118	%	70-130	02.16.19 04.45	
4-Bromofluorobenzene	460-00-4	114	%	70-130	02.16.19 04.45	

Certificate of Analytical Results 614288

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**SW07**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-011	Date Collected:	02.07.19 09.10	Sample Depth:	0 - 4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.13.19 14.00	Basis:	Wet Weight
Seq Number:	3079119				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**333**	4.95	mg/kg	02.13.19 17.28		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.14.19 17.00	Basis:	Wet Weight
Seq Number:	3079290				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.15.19 02.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	**44.7**	15.0	mg/kg	02.15.19 02.46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.15.19 02.46	U	1
Total TPH	PHC635	**44.7**	15.0	mg/kg	02.15.19 02.46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	02.15.19 02.46	
o-Terphenyl	84-15-1	95	%	70-135	02.15.19 02.46	

Certificate of Analytical Results 614288

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**SW07**	Matrix:	Soil	Date Received:	02.12.19 12.30
Lab Sample Id:	614288-011	Date Collected:	02.07.19 09.10	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.15.19 13.00	Basis:	Wet Weight
Seq Number:	3079389				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.16.19 05.04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.16.19 05.04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.16.19 05.04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.16.19 05.04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.16.19 05.04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.16.19 05.04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.16.19 05.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	116	%	70-130	02.16.19 05.04	
4-Bromofluorobenzene	460-00-4	111	%	70-130	02.16.19 05.04	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 614288

LT Environmental, Inc.

JRU-48

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3079119 — Matrix: Solid — Date Prep: 02.13.19
MB Sample Id: 7671710-1-BLK — LCS Sample Id: 7671710-1-BKS — LCSD Sample Id: 7671710-1-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	253	101	252	101	90-110	0	20	mg/kg	02.13.19 15:03	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3079119 — Matrix: Soil — Date Prep: 02.13.19
Parent Sample Id: 614283-009 — MS Sample Id: 614283-009 S — MSD Sample Id: 614283-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	63.0	250	333	108	333	108	90-110	0	20	mg/kg	02.13.19 15:32	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3079119 — Matrix: Soil — Date Prep: 02.13.19
Parent Sample Id: 614283-010 — MS Sample Id: 614283-010 S — MSD Sample Id: 614283-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	236	250	505	108	507	108	90-110	0	20	mg/kg	02.13.19 17:47	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3079094 — Matrix: Solid — Date Prep: 02.13.19
MB Sample Id: 7671746-1-BLK — LCS Sample Id: 7671746-1-BKS — LCSD Sample Id: 7671746-1-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	907	91	927	93	70-135	2	20	mg/kg	02.13.19 12:33	
Diesel Range Organics (DRO)	<8.13	1000	943	94	937	94	70-135	1	20	mg/kg	02.13.19 12:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		128		125		70-135	%	02.13.19 12:33
o-Terphenyl	99		126		125		70-135	%	02.13.19 12:33

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

QC Summary 614288

LT Environmental, Inc.

JRU-48

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3079290 — Matrix: Solid — Date Prep: 02.14.19
MB Sample Id: 7671840-1-BLK — LCS Sample Id: 7671840-1-BKS — LCSD Sample Id: 7671840-1-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	910	91	881	88	70-135	3	20	mg/kg	02.14.19 22:27	
Diesel Range Organics (DRO)	<8.13	1000	1000	100	976	98	70-135	2	20	mg/kg	02.14.19 22:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		123		124		70-135	%	02.14.19 22:27
o-Terphenyl	98		109		108		70-135	%	02.14.19 22:27

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3079094 — Matrix: Soil — Date Prep: 02.13.19
Parent Sample Id: 614287-001 — MS Sample Id: 614287-001 S — MSD Sample Id: 614287-001 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)	<7.98	997	960	96	969	97	70-135	1	20	mg/kg	02.13.19 13:33	
Diesel Range Organics (DRO)	<8.10	997	995	100	1010	101	70-135	1	20	mg/kg	02.13.19 13:33	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		126		70-135	%	02.13.19 13:33
o-Terphenyl	120		114		70-135	%	02.13.19 13:33

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3079290 — Matrix: Soil — Date Prep: 02.14.19
Parent Sample Id: 614452-001 — MS Sample Id: 614452-001 S — MSD Sample Id: 614452-001 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)	<7.98	997	887	89	894	89	70-135	1	20	mg/kg	02.14.19 23:27	
Diesel Range Organics (DRO)	11.8	997	907	90	906	90	70-135	0	20	mg/kg	02.14.19 23:27	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		110		70-135	%	02.14.19 23:27
o-Terphenyl	94		91		70-135	%	02.14.19 23:27

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

QC Summary 614288

LT Environmental, Inc.

JRU-48

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3079312 — Matrix: Solid — Date Prep: 02.14.19
MB Sample Id: 7671852-1-BLK — LCS Sample Id: 7671852-1-BKS — LCSD Sample Id: 7671852-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.115	115	0.122	122	70-130	6	35	mg/kg	02.15.19 11:47	
Toluene	<0.000456	0.100	0.0986	99	0.102	102	70-130	3	35	mg/kg	02.15.19 11:47	
Ethylbenzene	<0.000565	0.100	0.0925	93	0.0945	95	70-130	2	35	mg/kg	02.15.19 11:47	
m,p-Xylenes	<0.00101	0.200	0.183	92	0.185	93	70-130	1	35	mg/kg	02.15.19 11:47	
o-Xylene	<0.000344	0.100	0.0918	92	0.0936	94	70-130	2	35	mg/kg	02.15.19 11:47	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		108		110		70-130	%	02.15.19 11:47
4-Bromofluorobenzene	97		101		100		70-130	%	02.15.19 11:47

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3079389 — Matrix: Solid — Date Prep: 02.15.19
MB Sample Id: 7671896-1-BLK — LCS Sample Id: 7671896-1-BKS — LCSD Sample Id: 7671896-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000386	0.100	0.121	121	0.126	126	70-130	4	35	mg/kg	02.15.19 21:12	
Toluene	<0.000457	0.100	0.106	106	0.110	110	70-130	4	35	mg/kg	02.15.19 21:12	
Ethylbenzene	<0.000566	0.100	0.0996	100	0.103	103	70-130	3	35	mg/kg	02.15.19 21:12	
m,p-Xylenes	<0.00102	0.200	0.201	101	0.209	105	70-130	4	35	mg/kg	02.15.19 21:12	
o-Xylene	<0.00200	0.100	0.0994	99	0.103	103	70-130	4	35	mg/kg	02.15.19 21:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		109		109		70-130	%	02.15.19 21:12
4-Bromofluorobenzene	93		103		103		70-130	%	02.15.19 21:12

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3079312 — Matrix: Soil — Date Prep: 02.14.19
Parent Sample Id: 614266-006 — MS Sample Id: 614266-006 S — MSD Sample Id: 614266-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.00109	0.100	0.0536	53	0.0596	59	70-130	11	35	mg/kg	02.15.19 12:25	X
Toluene	0.0134	0.100	0.0407	27	0.0516	38	70-130	24	35	mg/kg	02.15.19 12:25	X
Ethylbenzene	<0.000566	0.100	0.0318	32	0.0435	44	70-130	31	35	mg/kg	02.15.19 12:25	X
m,p-Xylenes	0.00132	0.200	0.0696	34	0.0887	44	70-130	24	35	mg/kg	02.15.19 12:25	X
o-Xylene	0.00673	0.100	0.0431	36	0.0531	47	70-130	21	35	mg/kg	02.15.19 12:25	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		114		70-130	%	02.15.19 12:25
4-Bromofluorobenzene	118		109		70-130	%	02.15.19 12:25

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

QC Summary 614288

LT Environmental, Inc.

JRU-48

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

Seq Number: 3079389 Matrix: Soil Date Prep: 02.15.19

Parent Sample Id: 614397-001 MS Sample Id: 614397-001 S MSD Sample Id: 614397-001 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	0.0996	0.0472	47	0.0495	50	70-130	5	35	mg/kg	02.15.19 21:50	X
Toluene	0.00129	0.0996	0.0295	28	0.0269	26	70-130	9	35	mg/kg	02.15.19 21:50	X
Ethylbenzene	<0.000563	0.0996	0.0206	21	0.0189	19	70-130	9	35	mg/kg	02.15.19 21:50	X
m,p-Xylenes	0.00161	0.199	0.0446	22	0.0393	19	70-130	13	35	mg/kg	02.15.19 21:50	X
o-Xylene	0.0123	0.0996	0.0125	0	0.0111	0	70-130	12	35	mg/kg	02.15.19 21:50	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		114		70-130	%	02.15.19 21:50
4-Bromofluorobenzene	110		104		70-130	%	02.15.19 21:50

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

Chain of Custody

Work Order No: 614288

XENCO LABORATORIES

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

www.xenco.com Page 1 of 2

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

Work Order Comments

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

Project Name:	JRU-48	Turn Around	
Project Number:	01291 8032	Routine	☑
P.O. Number:	2RP-1142 2RP-2556	Rush:	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0-2 | 0-2	Thermometer ID:	18
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.1
Sample Custody Seals:	Yes No (N/A)	Total Containers:	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Sample Comments
FS01	S	02/08/19	1100	4.5'	1	X	X	X	Composite
FS02		02/07/19	1010	4.5'		X	X	X	
FS03		02/07/19	1005	4'		X	X	X	
FS04		02/07/19	0930	4'		X	X	X	
FS05		02/07/19	0920	4'		X	X	X	
SW01		02/07/19	1015	0-4'		X	X	X	
SW03		02/08/19	1115	0-3'		X	X	X	
SW04		02/07/19	0915	0-4'		X	X	X	
SW05		02/08/19	1215	0-4'		X	X	X	
SW06		02/07/19	1000	0-4'		X	X	X	

Work Order Notes

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

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time		Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		Timothy L. Elliott	02/07/2019 10:50	2			2/12/19 1230
3				4			
5				6			

Revised Date 051418 Rev. 2018.1

7744 4346 9421

Chain of Custody

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

Work Order No: 614288

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

Work Order Comments

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

Project Name:	JRU-48	Turn Around	
Project Number:	01291S032	Routine	☑
P.O. Number:	2RP-1142 2RP-2556	Rush:	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.3 | 0.2	Thermometer ID	IR6
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.1
Sample Custody Seals:	Yes No (N/A)	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Sample Comments
SW07	S	02/07/19	0910	0-4'	1	X	X	X	Composite

ANALYSIS REQUEST

Work Order Notes

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time		Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		Timothy P. Elkins	02/11/2019 10:55	2			2/12/19 1730
3				4			
5				6			

Revised Date 051418 Rev. 2018.1

7744 4346 9421

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 02/12/2019 12:30:00 PM

Work Order #: 614288

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: 02/12/2019

Checklist reviewed by: Jessica Kramer Date: 02/12/2019

Jessica Kramer

Analytical Report 615070

for

LT Environmental, Inc.

Project Manager: Adrian Baker

JRU-48

012918032

01-MAR-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

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

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

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

01-MAR-19

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

Reference: XENCO Report No(s): **615070**
JRU-48
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) 615070. 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. 615070 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 615070

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW08	S	02-15-19 09:40	0 - 4 ft	615070-001

Version: 1.%

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU-48

Project ID: *012918032*
Work Order Number(s): *615070*

Report Date: *01-MAR-19*
Date Received: *02/19/2019*

Sample receipt non conformances and comments:

Per clients email corrected sample name. JK 03/01/19
SW02 to SW08

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3080242 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 615070

LT Environmental, Inc., Arvada, CO

Project Name: JRU-48

Project Id: 012918032
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Tue Feb-19-19 04:30 pm
Report Date: 01-MAR-19
Project Manager: Jessica Kramer

Analysis Requested								
	Lab Id:	615070-001						
	Field Id:	SW08						
	Depth:	0-4 ft						
	Matrix:	SOIL						
	Sampled:	Feb-15-19 09:40						
BTEX by EPA 8021B	***Extracted:***	Feb-25-19 08:00						
	Analyzed:	Feb-25-19 18:01						
	Units/RL:	mg/kg	RL					
Benzene		<0.00201	0.00201					
Toluene		<0.00201	0.00201					
Ethylbenzene		<0.00201	0.00201					
m,p-Xylenes		<0.00402	0.00402					
o-Xylene		<0.00201	0.00201					
Total Xylenes		<0.00201	0.00201					
Total BTEX		<0.00201	0.00201					
Inorganic Anions by EPA 300	***Extracted:***	Feb-21-19 13:00						
	Analyzed:	Feb-21-19 20:27						
	Units/RL:	mg/kg	RL					
Chloride		1630	24.9					
TPH by SW8015 Mod	***Extracted:***	Feb-22-19 14:00						
	Analyzed:	Feb-23-19 05:40						
	Units/RL:	mg/kg	RL					
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0					
Diesel Range Organics (DRO)		85.2	15.0					
Motor Oil Range Hydrocarbons (MRO)		20.9	15.0					
Total TPH		106	15.0					

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

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analytical Results 615070

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**SW08**	Matrix:	Soil	Date Received:	02.19.19 16.30
Lab Sample Id:	615070-001	Date Collected:	02.15.19 09.40	Sample Depth:	0 - 4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	02.21.19 13.00	Basis:	Wet Weight
Seq Number:	3080063				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1630**	24.9	mg/kg	02.21.19 20.27		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.22.19 14.00	Basis:	Wet Weight
Seq Number:	3080227				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.23.19 05.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	**85.2**	15.0	mg/kg	02.23.19 05.40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**20.9**	15.0	mg/kg	02.23.19 05.40		1
Total TPH	PHC635	**106**	15.0	mg/kg	02.23.19 05.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	02.23.19 05.40	
o-Terphenyl	84-15-1	92	%	70-135	02.23.19 05.40	

Certificate of Analytical Results 615070

LT Environmental, Inc., Arvada, CO

JRU-48

Sample Id:	**SW08**	Matrix:	Soil	Date Received:	02.19.19 16.30
Lab Sample Id:	615070-001	Date Collected:	02.15.19 09.40	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	02.25.19 08.00	Basis:	Wet Weight
Seq Number:	3080242				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.25.19 18.01	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.25.19 18.01	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.25.19 18.01	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.25.19 18.01	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.25.19 18.01	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.25.19 18.01	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.25.19 18.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	112	%	70-130	02.25.19 18.01	
4-Bromofluorobenzene	460-00-4	116	%	70-130	02.25.19 18.01	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 615070

LT Environmental, Inc.

JRU-48

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3080063 — Matrix: Solid — Date Prep: 02.21.19
MB Sample Id: 7672291-1-BLK — LCS Sample Id: 7672291-1-BKS — LCSD Sample Id: 7672291-1-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	247	99	248	99	90-110	0	20	mg/kg	02.21.19 16:23	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3080063 — Matrix: Soil — Date Prep: 02.21.19
Parent Sample Id: 615139-004 — MS Sample Id: 615139-004 S — MSD Sample Id: 615139-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	353	249	582	92	593	96	90-110	2	20	mg/kg	02.21.19 16:41	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3080063 — Matrix: Soil — Date Prep: 02.21.19
Parent Sample Id: 615149-021 — MS Sample Id: 615149-021 S — MSD Sample Id: 615149-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	92.7	250	372	112	361	107	90-110	3	20	mg/kg	02.21.19 19:10	X

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3080227 — Matrix: Solid — Date Prep: 02.22.19
MB Sample Id: 7672374-1-BLK — LCS Sample Id: 7672374-1-BKS — LCSD Sample Id: 7672374-1-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	933	93	915	92	70-135	2	20	mg/kg	02.22.19 21:27	
Diesel Range Organics (DRO)	<8.13	1000	1030	103	990	99	70-135	4	20	mg/kg	02.22.19 21:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		121		130		70-135	%	02.22.19 21:27
o-Terphenyl	104		109		125		70-135	%	02.22.19 21:27

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

QC Summary 615070

LT Environmental, Inc.

JRU-48

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3080227 | Matrix: Soil | Date Prep: 02.22.19
Parent Sample Id: 615310-001 | MS Sample Id: 615310-001 S | MSD Sample Id: 615310-001 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)	8.49	999	909	90	914	91	70-135	1	20	mg/kg	02.22.19 22:25	
Diesel Range Organics (DRO)	52.5	999	998	95	1020	97	70-135	2	20	mg/kg	02.22.19 22:25	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		122		70-135	%	02.22.19 22:25
o-Terphenyl	120		100		70-135	%	02.22.19 22:25

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3080242 | Matrix: Solid | Date Prep: 02.25.19
MB Sample Id: 7672435-1-BLK | LCS Sample Id: 7672435-1-BKS | LCSD Sample Id: 7672435-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000384	0.0998	0.108	108	0.105	105	70-130	3	35	mg/kg	02.25.19 08:45	
Toluene	<0.000455	0.0998	0.102	102	0.0917	92	70-130	11	35	mg/kg	02.25.19 08:45	
Ethylbenzene	<0.000564	0.0998	0.104	104	0.0868	87	70-130	18	35	mg/kg	02.25.19 08:45	
m,p-Xylenes	<0.00101	0.200	0.214	107	0.176	88	70-130	19	35	mg/kg	02.25.19 08:45	
o-Xylene	<0.000344	0.0998	0.105	105	0.0862	86	70-130	20	35	mg/kg	02.25.19 08:45	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		101		108		70-130	%	02.25.19 08:45
4-Bromofluorobenzene	96		104		97		70-130	%	02.25.19 08:45

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3080242 | Matrix: Soil | Date Prep: 02.25.19
Parent Sample Id: 615247-001 | MS Sample Id: 615247-001 S | MSD Sample Id: 615247-001 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	0.106	107	0.117	117	70-130	10	35	mg/kg	02.25.19 09:33	
Toluene	<0.000453	0.0994	0.0918	92	0.100	100	70-130	9	35	mg/kg	02.25.19 09:33	
Ethylbenzene	<0.000561	0.0994	0.0871	88	0.0951	95	70-130	9	35	mg/kg	02.25.19 09:33	
m,p-Xylenes	<0.00101	0.199	0.177	89	0.191	96	70-130	8	35	mg/kg	02.25.19 09:33	
o-Xylene	<0.000342	0.0994	0.0865	87	0.0940	94	70-130	8	35	mg/kg	02.25.19 09:33	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		111		70-130	%	02.25.19 09:33
4-Bromofluorobenzene	102		102		70-130	%	02.25.19 09:33

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

XENCO LABORATORIES

Chain of Custody

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

Work Order No: 615070

www.xenco.com Page 1 of 1

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

Work Order Comments

Program: UST/PST ☐ RP ☐ rownfields ☐ C ☐ perfund ☐
State of Project:
Reporting: Level II ☐ evel III ☐ ST/UST ☐ RP ☐ vel IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	JRU-48	Turn Around	
Project Number:	012918032	Routine	☑
P.O. Number:	2RP-1142 2RP-2556	Rush:	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes (No)	Wet Ice: (Yes) No
Temperature (°C):	2.4/2.3	Thermometer ID	R8
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.1
Sample Custody Seals:	Yes No (N/A)	Total Containers:	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Sample Comments
SW02	S	02/15/19	0940	0-4'	1	X	X	X	Composite

Work Order Notes

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

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Robert McAfee	Timothy P. Elliott	02/15/19 1650	2 [signature]	[signature]	2/19/19 1630
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

7744 9803 0883

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

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 02/19/2019 04:30:00 PM

Work Order #: 615070

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)?	2.3
#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)?	**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: 02/19/2019

Checklist reviewed by: Jessica Kramer Date: 02/20/2019

Jessica Kramer

Analytical Report 631730

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU 48

012918082

24-JUL-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)

24-JUL-19

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

Reference: XENCO Report No(s): **631730**
JRU 48
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) 631730. 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. 631730 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 631730

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH02	S	07-19-19 12:45	0.5 ft	631730-001
PH02A	S	07-19-19 12:50	0.5 ft	631730-002

Version: 1.%

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 48

Project ID: *012918082*
Work Order Number(s): *631730*

Report Date: *24-JUL-19*
Date Received: *07/23/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3096349 BTEX by EPA 8021B

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

Certificate of Analysis Summary 631730

LT Environmental, Inc., Arvada, CO

Project Name: JRU 48

Project Id: 012918082
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Tue Jul-23-19 12:15 pm
Report Date: 24-JUL-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	631730-001		631730-002									
	Field Id:	PH02		PH02A									
	Depth:	0.5- ft		0.5- ft									
	Matrix:	SOIL		SOIL									
	Sampled:	Jul-19-19 12:45		Jul-19-19 12:50									
BTEX by EPA 8021B	***Extracted:***	Jul-23-19 13:15		Jul-23-19 13:15									
	Analyzed:	Jul-24-19 04:37		Jul-24-19 01:44									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Benzene		<0.00198	0.00198	<0.00198	0.00198								
Toluene		<0.00198	0.00198	<0.00198	0.00198								
Ethylbenzene		<0.00198	0.00198	<0.00198	0.00198								
m,p-Xylenes		<0.00397	0.00397	<0.00397	0.00397								
o-Xylene		<0.00198	0.00198	<0.00198	0.00198								
Total Xylenes		<0.00198	0.00198	<0.00198	0.00198								
Total BTEX		<0.00198	0.00198	<0.00198	0.00198								
Chloride by EPA 300	***Extracted:***	Jul-23-19 14:20		Jul-23-19 14:20									
	Analyzed:	Jul-23-19 16:35		Jul-23-19 16:54									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Chloride		<5.00	5.00	<4.97	4.97								
TPH by SW8015 Mod	***Extracted:***	Jul-23-19 17:00		Jul-23-19 17:00									
	Analyzed:	Jul-24-19 04:16		Jul-24-19 04:40									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0								
Diesel Range Organics (DRO)		1570	15.0	199	15.0								
Motor Oil Range Hydrocarbons (MRO)		122	15.0	49.8	15.0								
Total TPH		1690	15.0	249	15.0								
Total GRO-DRO		1570	15.0	199	15.0								

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

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analytical Results 631730

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	07.23.19 12.15
Lab Sample Id:	631730-001	Date Collected:	07.19.19 12.45	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.23.19 14.20	Basis:	Wet Weight
Seq Number:	3096273				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	07.23.19 16.35	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.23.19 17.00	Basis:	Wet Weight
Seq Number:	3096277				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.24.19 04.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	**1570**	15.0	mg/kg	07.24.19 04.16		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**122**	15.0	mg/kg	07.24.19 04.16		1
Total TPH	PHC635	**1690**	15.0	mg/kg	07.24.19 04.16		1
Total GRO-DRO	PHC628	**1570**	15.0	mg/kg	07.24.19 04.16		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	07.24.19 04.16	
o-Terphenyl	84-15-1	99	%	70-135	07.24.19 04.16	

Certificate of Analytical Results 631730

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	07.23.19 12.15
Lab Sample Id:	631730-001	Date Collected:	07.19.19 12.45	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.23.19 13.15	Basis:	Wet Weight
Seq Number:	3096349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.24.19 04.37	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.24.19 04.37	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.24.19 04.37	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	07.24.19 04.37	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.24.19 04.37	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.24.19 04.37	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.24.19 04.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	89	%	70-130	07.24.19 04.37	
4-Bromofluorobenzene	460-00-4	108	%	70-130	07.24.19 04.37	

Certificate of Analytical Results 631730

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	07.23.19 12.15
Lab Sample Id:	631730-002	Date Collected:	07.19.19 12.50	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.23.19 14.20	Basis:	Wet Weight
Seq Number:	3096273				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	07.23.19 16.54	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.23.19 17.00	Basis:	Wet Weight
Seq Number:	3096277				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.24.19 04.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	**199**	15.0	mg/kg	07.24.19 04.40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**49.8**	15.0	mg/kg	07.24.19 04.40		1
Total TPH	PHC635	**249**	15.0	mg/kg	07.24.19 04.40		1
Total GRO-DRO	PHC628	**199**	15.0	mg/kg	07.24.19 04.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	07.24.19 04.40	
o-Terphenyl	84-15-1	94	%	70-135	07.24.19 04.40	

Certificate of Analytical Results 631730

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	07.23.19 12.15
Lab Sample Id:	631730-002	Date Collected:	07.19.19 12.50	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.23.19 13.15	Basis:	Wet Weight
Seq Number:	3096349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.24.19 01.44	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.24.19 01.44	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.24.19 01.44	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	07.24.19 01.44	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.24.19 01.44	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.24.19 01.44	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.24.19 01.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	07.24.19 01.44	
4-Bromofluorobenzene	460-00-4	101	%	70-130	07.24.19 01.44	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 631730

LT Environmental, Inc.

JRU 48

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096273 — Matrix: Solid — Date Prep: 07.23.19
MB Sample Id: 7682587-1-BLK — LCS Sample Id: 7682587-1-BKS — LCSD Sample Id: 7682587-1-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	249	100	249	100	90-110	0	20	mg/kg	07.23.19 16:16	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096273 — Matrix: Soil — Date Prep: 07.23.19
Parent Sample Id: 631730-001 — MS Sample Id: 631730-001 S — MSD Sample Id: 631730-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.03	250	251	100	252	100	90-110	0	20	mg/kg	07.23.19 16:41	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096273 — Matrix: Soil — Date Prep: 07.23.19
Parent Sample Id: 631734-005 — MS Sample Id: 631734-005 S — MSD Sample Id: 631734-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	209	250	465	102	465	102	90-110	0	20	mg/kg	07.23.19 18:09	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3096277 — Matrix: Solid — Date Prep: 07.23.19
MB Sample Id: 7682644-1-BLK — LCS Sample Id: 7682644-1-BKS — LCSD Sample Id: 7682644-1-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	931	93	903	90	70-135	3	20	mg/kg	07.23.19 21:29	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	1050	105	70-135	1	20	mg/kg	07.23.19 21:29	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	81		90		94		70-135	%	07.23.19 21:29
o-Terphenyl	78		96		106		70-135	%	07.23.19 21:29

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

QC Summary 631730

LT Environmental, Inc.

JRU 48

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3096277 | Matrix: Soil | Date Prep: 07.23.19
Parent Sample Id: 631734-001 | MS Sample Id: 631734-001 S | MSD Sample Id: 631734-001 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)	10.8	998	1160	115	1160	115	70-135	0	20	mg/kg	07.24.19 07:51	
Diesel Range Organics (DRO)	14.7	998	1150	114	1090	108	70-135	5	20	mg/kg	07.24.19 07:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		102		70-135	%	07.24.19 07:51
o-Terphenyl	85		92		70-135	%	07.24.19 07:51

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3096349 | Matrix: Solid | Date Prep: 07.23.19
MB Sample Id: 7682601-1-BLK | LCS Sample Id: 7682601-1-BKS | LCSD Sample Id: 7682601-1-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	0.101	101	0.102	102	70-130	1	35	mg/kg	07.24.19 02:37	
Toluene	<0.00200	0.100	0.0980	98	0.0987	99	70-130	1	35	mg/kg	07.24.19 02:37	
Ethylbenzene	<0.00200	0.100	0.114	114	0.114	114	70-130	0	35	mg/kg	07.24.19 02:37	
m,p-Xylenes	<0.00400	0.200	0.233	117	0.234	117	70-130	0	35	mg/kg	07.24.19 02:37	
o-Xylene	<0.00200	0.100	0.111	111	0.111	111	70-130	0	35	mg/kg	07.24.19 02:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		99		98		70-130	%	07.24.19 02:37
4-Bromofluorobenzene	102		112		110		70-130	%	07.24.19 02:37

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3096349 | Matrix: Soil | Date Prep: 07.23.19
Parent Sample Id: 631730-001 | MS Sample Id: 631730-001 S | MSD Sample Id: 631730-001 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	0.0965	97	0.0938	94	70-130	3	35	mg/kg	07.24.19 01:03	
Toluene	<0.00200	0.100	0.0884	88	0.0874	88	70-130	1	35	mg/kg	07.24.19 01:03	
Ethylbenzene	<0.00200	0.100	0.0820	82	0.0794	80	70-130	3	35	mg/kg	07.24.19 01:03	
m,p-Xylenes	<0.00400	0.200	0.160	80	0.159	80	70-130	1	35	mg/kg	07.24.19 01:03	
o-Xylene	<0.00200	0.100	0.0763	76	0.0778	78	70-130	2	35	mg/kg	07.24.19 01:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		98		70-130	%	07.24.19 01:03
4-Bromofluorobenzene	92		107		70-130	%	07.24.19 01:03

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

Final 1.000

XENCO LABORATORIES

Chain of Custody

Work Order No: 631730

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432) 704-5440 EL Paso,TX (915) 585-3443 Lubbock,TX (806) 794-1296 Craslbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701 www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental	Company Name:	XTO
Address:	3300 North A Street	Address:	3104 E. Greene Street
City, State ZIP:	Midland TX 79705	City, State ZIP:	Carlsbad NM 88220
Phone:	432 236 3849	Email:	abyers@ltenv.com

Work Order Comments

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

Project Name:	JRU 48	Turn Around	
Project Number:	012918032	Routine ☐	
Project Location	Rural Eddy Co.	Rush: Same day	
Sampler's Name:	Anna Byers	Due Date:	
PO #:	22P-1142 & 22P-2556	Quote #:	

SAMPLE RECEIPT	Temp Blank: Yes (No)	Wet Ice: (Yes) No	
Temperature (°C):	3.3/3.1	Thermometer ID	R8
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Total Containers:	

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	Pres. Code	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Sample Comments
	PH02	S	7/19/19	1245	0.5'	1		X	X	X	
	PH02A	S	7/19/19	1250	1.0'	1		X	X	X	

ANALYSIS REQUEST

Preservative Codes

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

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

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			07/22/2019 9:25	2		07/22/2019 10:10
3		Fed Ex	7/22/19 14:00	4		7/23/19 12:15
5				6		

Revised Date 022619 Rev. 2019.1

Analytical Report 631731

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU 48

012918032

24-JUL-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)

24-JUL-19

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

Reference: XENCO Report No(s): **631731**
JRU 48
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) 631731. 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. 631731 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 631731

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	07-19-19 09:30	0.5 ft	631731-001
PH01A	S	07-19-19 09:50	4.5 ft	631731-002

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 48

Project ID: *012918032*
Work Order Number(s): *631731*

Report Date: *24-JUL-19*
Date Received: *07/23/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3096349 BTEX by EPA 8021B

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

Certificate of Analysis Summary 631731

LT Environmental, Inc., Arvada, CO

Project Name: JRU 48

Project Id: 012918032
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Tue Jul-23-19 12:00 am
Report Date: 24-JUL-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	631731-001		631731-002					
	Field Id:	PH01		PH01A					
	Depth:	0.5- ft		4.5- ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Jul-19-19 09:30		Jul-19-19 09:50					
BTEX by EPA 8021B	***Extracted:***	Jul-23-19 13:15		Jul-23-19 13:15					
	Analyzed:	Jul-24-19 05:17		Jul-24-19 02:04					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00198	0.00198	<0.00199	0.00199				
Toluene		<0.00198	0.00198	<0.00199	0.00199				
Ethylbenzene		<0.00198	0.00198	<0.00199	0.00199				
m,p-Xylenes		<0.00396	0.00396	<0.00398	0.00398				
o-Xylene		<0.00198	0.00198	<0.00199	0.00199				
Total Xylenes		<0.00198	0.00198	<0.00199	0.00199				
Total BTEX		<0.00198	0.00198	<0.00199	0.00199				
Chloride by EPA 300	***Extracted:***	Jul-23-19 14:20		Jul-23-19 14:20					
	Analyzed:	Jul-23-19 17:00		Jul-23-19 17:06					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		374	5.04	633	4.99				
TPH by SW8015 Mod	***Extracted:***	Jul-23-19 17:00		Jul-23-19 17:00					
	Analyzed:	Jul-24-19 05:03		Jul-24-19 05:27					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		53.7	15.0	104	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0				
Total TPH		53.7	15.0	104	15.0				
Total GRO-DRO		53.7	15.0	104	15.0				

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

Jessica Kramer
Project Assistant

Final 1.000

Certificate of Analytical Results 631731

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH01**	Matrix:	Soil	Date Received:	07.23.19 00.00
Lab Sample Id:	631731-001	Date Collected:	07.19.19 09.30	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.23.19 14.20	Basis:	Wet Weight
Seq Number:	3096273				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**374**	5.04	mg/kg	07.23.19 17.00		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.23.19 17.00	Basis:	Wet Weight
Seq Number:	3096277				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.24.19 05.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	**53.7**	15.0	mg/kg	07.24.19 05.03		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.24.19 05.03	U	1
Total TPH	PHC635	**53.7**	15.0	mg/kg	07.24.19 05.03		1
Total GRO-DRO	PHC628	**53.7**	15.0	mg/kg	07.24.19 05.03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	07.24.19 05.03	
o-Terphenyl	84-15-1	87	%	70-135	07.24.19 05.03	

Certificate of Analytical Results 631731

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH01**	Matrix:	Soil	Date Received:	07.23.19 00.00
Lab Sample Id:	631731-001	Date Collected:	07.19.19 09.30	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.23.19 13.15	Basis:	Wet Weight
Seq Number:	3096349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.24.19 05.17	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.24.19 05.17	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.24.19 05.17	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	07.24.19 05.17	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.24.19 05.17	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.24.19 05.17	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.24.19 05.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	123	%	70-130	07.24.19 05.17	
1,4-Difluorobenzene	540-36-3	97	%	70-130	07.24.19 05.17	

Certificate of Analytical Results 631731

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	07.23.19 00.00
Lab Sample Id:	631731-002	Date Collected:	07.19.19 09.50	Sample Depth:	4.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.23.19 14.20	Basis:	Wet Weight
Seq Number:	3096273				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**633**	4.99	mg/kg	07.23.19 17.06		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.23.19 17.00	Basis:	Wet Weight
Seq Number:	3096277				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.24.19 05.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	**104**	15.0	mg/kg	07.24.19 05.27		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.24.19 05.27	U	1
Total TPH	PHC635	**104**	15.0	mg/kg	07.24.19 05.27		1
Total GRO-DRO	PHC628	**104**	15.0	mg/kg	07.24.19 05.27		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	07.24.19 05.27	
o-Terphenyl	84-15-1	104	%	70-135	07.24.19 05.27	

Certificate of Analytical Results 631731

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	07.23.19 00.00
Lab Sample Id:	631731-002	Date Collected:	07.19.19 09.50	Sample Depth:	4.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.23.19 13.15	Basis:	Wet Weight
Seq Number:	3096349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.24.19 02.04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.24.19 02.04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.24.19 02.04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.24.19 02.04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.24.19 02.04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.24.19 02.04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.24.19 02.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118	%	70-130	07.24.19 02.04	
1,4-Difluorobenzene	540-36-3	97	%	70-130	07.24.19 02.04	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 631731

LT Environmental, Inc.

JRU 48

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096273 — Matrix: Solid — Date Prep: 07.23.19
MB Sample Id: 7682587-1-BLK — LCS Sample Id: 7682587-1-BKS — LCSD Sample Id: 7682587-1-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	249	100	249	100	90-110	0	20	mg/kg	07.23.19 16:16	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096273 — Matrix: Soil — Date Prep: 07.23.19
Parent Sample Id: 631730-001 — MS Sample Id: 631730-001 S — MSD Sample Id: 631730-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.03	250	251	100	252	100	90-110	0	20	mg/kg	07.23.19 16:41	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096273 — Matrix: Soil — Date Prep: 07.23.19
Parent Sample Id: 631734-005 — MS Sample Id: 631734-005 S — MSD Sample Id: 631734-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	209	250	465	102	465	102	90-110	0	20	mg/kg	07.23.19 18:09	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3096277 — Matrix: Solid — Date Prep: 07.23.19
MB Sample Id: 7682644-1-BLK — LCS Sample Id: 7682644-1-BKS — LCSD Sample Id: 7682644-1-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	931	93	903	90	70-135	3	20	mg/kg	07.23.19 21:29	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	1050	105	70-135	1	20	mg/kg	07.23.19 21:29	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	81		90		94		70-135	%	07.23.19 21:29
o-Terphenyl	78		96		106		70-135	%	07.23.19 21:29

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

QC Summary 631731

LT Environmental, Inc.

JRU 48

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3096277 | Matrix: Soil | Date Prep: 07.23.19
Parent Sample Id: 631734-001 | MS Sample Id: 631734-001 S | MSD Sample Id: 631734-001 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)	10.8	998	1160	115	1160	115	70-135	0	20	mg/kg	07.24.19 07:51	
Diesel Range Organics (DRO)	14.7	998	1150	114	1090	108	70-135	5	20	mg/kg	07.24.19 07:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		102		70-135	%	07.24.19 07:51
o-Terphenyl	85		92		70-135	%	07.24.19 07:51

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3096349 | Matrix: Solid | Date Prep: 07.23.19
MB Sample Id: 7682601-1-BLK | LCS Sample Id: 7682601-1-BKS | LCSD Sample Id: 7682601-1-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	0.101	101	0.102	102	70-130	1	35	mg/kg	07.24.19 02:37	
Toluene	<0.00200	0.100	0.0980	98	0.0987	99	70-130	1	35	mg/kg	07.24.19 02:37	
Ethylbenzene	<0.00200	0.100	0.114	114	0.114	114	70-130	0	35	mg/kg	07.24.19 02:37	
m,p-Xylenes	<0.00400	0.200	0.233	117	0.234	117	70-130	0	35	mg/kg	07.24.19 02:37	
o-Xylene	<0.00200	0.100	0.111	111	0.111	111	70-130	0	35	mg/kg	07.24.19 02:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		99		98		70-130	%	07.24.19 02:37
4-Bromofluorobenzene	102		112		110		70-130	%	07.24.19 02:37

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3096349 | Matrix: Soil | Date Prep: 07.23.19
Parent Sample Id: 631730-001 | MS Sample Id: 631730-001 S | MSD Sample Id: 631730-001 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	0.0965	97	0.0938	94	70-130	3	35	mg/kg	07.24.19 01:03	
Toluene	<0.00200	0.100	0.0884	88	0.0874	88	70-130	1	35	mg/kg	07.24.19 01:03	
Ethylbenzene	<0.00200	0.100	0.0820	82	0.0794	80	70-130	3	35	mg/kg	07.24.19 01:03	
m,p-Xylenes	<0.00400	0.200	0.160	80	0.159	80	70-130	1	35	mg/kg	07.24.19 01:03	
o-Xylene	<0.00200	0.100	0.0763	76	0.0778	78	70-130	2	35	mg/kg	07.24.19 01:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		98		70-130	%	07.24.19 01:03
4-Bromofluorobenzene	92		107		70-130	%	07.24.19 01:03

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

XENCO LABORATORIES

Chain of Custody

Work Order No: 631731

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432) 704-5440 EL Paso,TX (915) 585-3443 Lubbock,TX (806) 794-1296 Crasbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701

www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental	Company Name:	XTO
Address:	3300 North A Street	Address:	3104 E. Greene Street
City, State ZIP:	Midland TX 79705	City, State ZIP:	Carlsbad NM 88220
Phone:	432 236 3849	Email:	abyers@ltenv.com

Work Order Comments

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

Project Name:	JRU 48	Turn Around	
Project Number:	012918032	Routine ☐	
Project Location	Rural Eddy County	Rush: Same day	
Sampler's Name:	Anna Byers	Due Date:	
PO #:	2RP-1142 + 2RP-2556	Quote #:	

SAMPLE RECEIPT

Temperature (°C):	3.3/3.1	Temp Blank:	Yes (No)
Received Intact:	(Yes) No	Wet Ice:	(Yes) No
Cooler Custody Seals:	Yes No (N/A)	Thermometer ID	R8
Sample Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
		Total Containers:	

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	Pres. Code	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
	PH01	S	7/19/19	0930	0.5'	1		X	X	X
	PH01A	S	7/19/19	0950	4.5'	1		X	X	X

Preservative Codes

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

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

Sample Comments

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

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

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		07/22/19 9:25	2		07/22/2019 10:16
3		FedEX	7/22/19 14:00	4		7/23/19 1215
5				6		

Revised Date 022619 Rev. 2019.1

Analytical Report 631732

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU 48

012918032

24-JUL-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)

24-JUL-19

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

Reference: XENCO Report No(s): **631732**
JRU 48
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) 631732. 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. 631732 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 631732

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01B	S	07-19-19 12:15	20 ft	631732-001

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 48

Project ID: *012918032*
Work Order Number(s): *631732*

Report Date: *24-JUL-19*
Date Received: *07/23/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3096349 BTEX by EPA 8021B

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

Certificate of Analysis Summary 631732

LT Environmental, Inc., Arvada, CO

Project Name: JRU 48

Project Id: 012918032
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Tue Jul-23-19 12:15 pm
Report Date: 24-JUL-19
Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	631732-001					
	Field Id:	PH01B					
	Depth:	20- ft					
	Matrix:	SOIL					
	Sampled:	Jul-19-19 12:15					
BTEX by EPA 8021B	***Extracted:***	Jul-23-19 13:15					
	Analyzed:	Jul-24-19 05:57					
	Units/RL:	mg/kg	RL				
Benzene		<0.00199	0.00199				
Toluene		<0.00199	0.00199				
Ethylbenzene		<0.00199	0.00199				
m,p-Xylenes		<0.00398	0.00398				
o-Xylene		<0.00199	0.00199				
Total Xylenes		<0.00199	0.00199				
Total BTEX		<0.00199	0.00199				
Chloride by EPA 300	***Extracted:***	Jul-23-19 14:20					
	Analyzed:	Jul-23-19 17:13					
	Units/RL:	mg/kg	RL				
Chloride		3560	25.0				
TPH by SW8015 Mod	***Extracted:***	Jul-23-19 17:00					
	Analyzed:	Jul-24-19 05:51					
	Units/RL:	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0				
Diesel Range Organics (DRO)		47.3	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0				
Total TPH		47.3	15.0				
Total GRO-DRO		47.3	15.0				

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

Jessica Kramer
Project Assistant

Final 1.000

Certificate of Analytical Results 631732

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH01B**	Matrix:	Soil	Date Received:	07.23.19 12.15
Lab Sample Id:	631732-001	Date Collected:	07.19.19 12.15	Sample Depth:	20 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.23.19 14.20	Basis:	Wet Weight
Seq Number:	3096273				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3560**	25.0	mg/kg	07.23.19 17.13		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.23.19 17.00	Basis:	Wet Weight
Seq Number:	3096277				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.24.19 05.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	**47.3**	15.0	mg/kg	07.24.19 05.51		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.24.19 05.51	U	1
Total TPH	PHC635	**47.3**	15.0	mg/kg	07.24.19 05.51		1
Total GRO-DRO	PHC628	**47.3**	15.0	mg/kg	07.24.19 05.51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	07.24.19 05.51	
o-Terphenyl	84-15-1	102	%	70-135	07.24.19 05.51	

Certificate of Analytical Results 631732

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH01B**	Matrix:	Soil	Date Received:	07.23.19 12.15
Lab Sample Id:	631732-001	Date Collected:	07.19.19 12.15	Sample Depth:	20 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.23.19 13.15	Basis:	Wet Weight
Seq Number:	3096349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.24.19 05.57	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.24.19 05.57	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.24.19 05.57	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.24.19 05.57	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.24.19 05.57	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.24.19 05.57	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.24.19 05.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	07.24.19 05.57	
4-Bromofluorobenzene	460-00-4	107	%	70-130	07.24.19 05.57	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 631732

LT Environmental, Inc.

JRU 48

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096273 — Matrix: Solid — Date Prep: 07.23.19
MB Sample Id: 7682587-1-BLK — LCS Sample Id: 7682587-1-BKS — LCSD Sample Id: 7682587-1-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	249	100	249	100	90-110	0	20	mg/kg	07.23.19 16:16	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096273 — Matrix: Soil — Date Prep: 07.23.19
Parent Sample Id: 631730-001 — MS Sample Id: 631730-001 S — MSD Sample Id: 631730-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.03	250	251	100	252	100	90-110	0	20	mg/kg	07.23.19 16:41	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096273 — Matrix: Soil — Date Prep: 07.23.19
Parent Sample Id: 631734-005 — MS Sample Id: 631734-005 S — MSD Sample Id: 631734-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	209	250	465	102	465	102	90-110	0	20	mg/kg	07.23.19 18:09	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3096277 — Matrix: Solid — Date Prep: 07.23.19
MB Sample Id: 7682644-1-BLK — LCS Sample Id: 7682644-1-BKS — LCSD Sample Id: 7682644-1-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	931	93	903	90	70-135	3	20	mg/kg	07.23.19 21:29	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	1050	105	70-135	1	20	mg/kg	07.23.19 21:29	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	81		90		94		70-135	%	07.23.19 21:29
o-Terphenyl	78		96		106		70-135	%	07.23.19 21:29

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

QC Summary 631732

LT Environmental, Inc.

JRU 48

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3096277 | Matrix: Soil | Date Prep: 07.23.19
Parent Sample Id: 631734-001 | MS Sample Id: 631734-001 S | MSD Sample Id: 631734-001 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)	10.8	998	1160	115	1160	115	70-135	0	20	mg/kg	07.24.19 07:51	
Diesel Range Organics (DRO)	14.7	998	1150	114	1090	108	70-135	5	20	mg/kg	07.24.19 07:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		102		70-135	%	07.24.19 07:51
o-Terphenyl	85		92		70-135	%	07.24.19 07:51

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3096349 | Matrix: Solid | Date Prep: 07.23.19
MB Sample Id: 7682601-1-BLK | LCS Sample Id: 7682601-1-BKS | LCSD Sample Id: 7682601-1-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	0.101	101	0.102	102	70-130	1	35	mg/kg	07.24.19 02:37	
Toluene	<0.00200	0.100	0.0980	98	0.0987	99	70-130	1	35	mg/kg	07.24.19 02:37	
Ethylbenzene	<0.00200	0.100	0.114	114	0.114	114	70-130	0	35	mg/kg	07.24.19 02:37	
m,p-Xylenes	<0.00400	0.200	0.233	117	0.234	117	70-130	0	35	mg/kg	07.24.19 02:37	
o-Xylene	<0.00200	0.100	0.111	111	0.111	111	70-130	0	35	mg/kg	07.24.19 02:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		99		98		70-130	%	07.24.19 02:37
4-Bromofluorobenzene	102		112		110		70-130	%	07.24.19 02:37

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3096349 | Matrix: Soil | Date Prep: 07.23.19
Parent Sample Id: 631730-001 | MS Sample Id: 631730-001 S | MSD Sample Id: 631730-001 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	0.0965	97	0.0938	94	70-130	3	35	mg/kg	07.24.19 01:03	
Toluene	<0.00200	0.100	0.0884	88	0.0874	88	70-130	1	35	mg/kg	07.24.19 01:03	
Ethylbenzene	<0.00200	0.100	0.0820	82	0.0794	80	70-130	3	35	mg/kg	07.24.19 01:03	
m,p-Xylenes	<0.00400	0.200	0.160	80	0.159	80	70-130	1	35	mg/kg	07.24.19 01:03	
o-Xylene	<0.00200	0.100	0.0763	76	0.0778	78	70-130	2	35	mg/kg	07.24.19 01:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		98		70-130	%	07.24.19 01:03
4-Bromofluorobenzene	92		107		70-130	%	07.24.19 01:03

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

Final 1.000

Chain of Custody

Work Order No: 631732

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432) 704-5440 EL Paso,TX (915) 585-3443 Lubbock,TX (806) 794-1296 Craslbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701
www.xenco.com

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	XT Environmental	Company Name:	XTO
Address:	3300 North A Street	Address:	3104 E. Greene Street
City, State ZIP:	Midland TX 79705	City, State ZIP:	Carlsbad NM 88220
Phone:	432 236 3849	Email:	abyers@herr.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:	JRU 48	Turn Around	
Project Number:	012918037	Routine ☐	
Project Location	Rural Eddy County	Rush: Same day	
Sampler's Name:	Anna Byers	Due Date:	
PO #:	2RP-1142 & 2RP-3560	Quote #:	

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

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	Pres. Code	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Sample Comments
	PH01B	S	7/19/19	1215	20'	1		X	X	X	

ANALYSIS REQUEST

Preservative Codes

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

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

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Anna Byers	FedEx	07/22/2019 9:25	2		07/22/19 10:10
3			7/22/19 14:00	4		7/23/19 1215
5				6		

Revised Date 022619 Rev. 2019.1

Analytical Report 631733

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU 48

012918082

24-JUL-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)

24-JUL-19

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

Reference: XENCO Report No(s): **631733**
JRU 48
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) 631733. 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. 631733 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 631733

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH02B	S	07-19-19 13:40	10 ft	631733-001

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 48

Project ID: *012918082*
Work Order Number(s): *631733*

Report Date: *24-JUL-19*
Date Received: *07/23/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3096349 BTEX by EPA 8021B

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

Certificate of Analysis Summary 631733

LT Environmental, Inc., Arvada, CO

Project Name: JRU 48

Project Id: 012918082
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Tue Jul-23-19 12:15 pm
Report Date: 24-JUL-19
Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	631733-001					
	Field Id:	PH02B					
	Depth:	10- ft					
	Matrix:	SOIL					
	Sampled:	Jul-19-19 13:40					
BTEX by EPA 8021B	***Extracted:***	Jul-23-19 13:15					
	Analyzed:	Jul-24-19 02:24					
	Units/RL:	mg/kg	RL				
Benzene		<0.00201	0.00201				
Toluene		<0.00201	0.00201				
Ethylbenzene		<0.00201	0.00201				
m,p-Xylenes		<0.00402	0.00402				
o-Xylene		<0.00201	0.00201				
Total Xylenes		<0.00201	0.00201				
Total BTEX		<0.00201	0.00201				
Chloride by EPA 300	***Extracted:***	Jul-23-19 14:20					
	Analyzed:	Jul-23-19 17:32					
	Units/RL:	mg/kg	RL				
Chloride		95.2	5.02				
TPH by SW8015 Mod	***Extracted:***	Jul-23-19 17:00					
	Analyzed:	Jul-24-19 06:15					
	Units/RL:	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9				
Diesel Range Organics (DRO)		36.6	14.9				
Motor Oil Range Hydrocarbons (MRO)		<14.9	14.9				
Total TPH		36.6	14.9				
Total GRO-DRO		36.6	14.9				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 631733

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH02B**	Matrix:	Soil	Date Received:	07.23.19 12.15
Lab Sample Id:	631733-001	Date Collected:	07.19.19 13.40	Sample Depth:	10 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.23.19 14.20	Basis:	Wet Weight
Seq Number:	3096273				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**95.2**	5.02	mg/kg	07.23.19 17.32		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.23.19 17.00	Basis:	Wet Weight
Seq Number:	3096277				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.24.19 06.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	**36.6**	14.9	mg/kg	07.24.19 06.15		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	07.24.19 06.15	U	1
Total TPH	PHC635	**36.6**	14.9	mg/kg	07.24.19 06.15		1
Total GRO-DRO	PHC628	**36.6**	14.9	mg/kg	07.24.19 06.15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	07.24.19 06.15	
o-Terphenyl	84-15-1	93	%	70-135	07.24.19 06.15	

Certificate of Analytical Results 631733

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH02B**	Matrix:	Soil	Date Received:	07.23.19 12.15
Lab Sample Id:	631733-001	Date Collected:	07.19.19 13.40	Sample Depth:	10 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.23.19 13.15	Basis:	Wet Weight
Seq Number:	3096349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.24.19 02.24	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.24.19 02.24	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.24.19 02.24	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.24.19 02.24	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.24.19 02.24	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.24.19 02.24	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.24.19 02.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	07.24.19 02.24	
4-Bromofluorobenzene	460-00-4	105	%	70-130	07.24.19 02.24	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 631733

LT Environmental, Inc.

JRU 48

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096273 — Matrix: Solid — Date Prep: 07.23.19
MB Sample Id: 7682587-1-BLK — LCS Sample Id: 7682587-1-BKS — LCSD Sample Id: 7682587-1-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	249	100	249	100	90-110	0	20	mg/kg	07.23.19 16:16	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096273 — Matrix: Soil — Date Prep: 07.23.19
Parent Sample Id: 631730-001 — MS Sample Id: 631730-001 S — MSD Sample Id: 631730-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.03	250	251	100	252	100	90-110	0	20	mg/kg	07.23.19 16:41	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096273 — Matrix: Soil — Date Prep: 07.23.19
Parent Sample Id: 631734-005 — MS Sample Id: 631734-005 S — MSD Sample Id: 631734-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	209	250	465	102	465	102	90-110	0	20	mg/kg	07.23.19 18:09	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3096277 — Matrix: Solid — Date Prep: 07.23.19
MB Sample Id: 7682644-1-BLK — LCS Sample Id: 7682644-1-BKS — LCSD Sample Id: 7682644-1-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	931	93	903	90	70-135	3	20	mg/kg	07.23.19 21:29	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	1050	105	70-135	1	20	mg/kg	07.23.19 21:29	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	81		90		94		70-135	%	07.23.19 21:29
o-Terphenyl	78		96		106		70-135	%	07.23.19 21:29

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

QC Summary 631733

LT Environmental, Inc.

JRU 48

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3096277 | Matrix: Soil | Date Prep: 07.23.19
Parent Sample Id: 631734-001 | MS Sample Id: 631734-001 S | MSD Sample Id: 631734-001 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)	10.8	998	1160	115	1160	115	70-135	0	20	mg/kg	07.24.19 07:51	
Diesel Range Organics (DRO)	14.7	998	1150	114	1090	108	70-135	5	20	mg/kg	07.24.19 07:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		102		70-135	%	07.24.19 07:51
o-Terphenyl	85		92		70-135	%	07.24.19 07:51

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3096349 | Matrix: Solid | Date Prep: 07.23.19
MB Sample Id: 7682601-1-BLK | LCS Sample Id: 7682601-1-BKS | LCSD Sample Id: 7682601-1-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	0.101	101	0.102	102	70-130	1	35	mg/kg	07.24.19 02:37	
Toluene	<0.00200	0.100	0.0980	98	0.0987	99	70-130	1	35	mg/kg	07.24.19 02:37	
Ethylbenzene	<0.00200	0.100	0.114	114	0.114	114	70-130	0	35	mg/kg	07.24.19 02:37	
m,p-Xylenes	<0.00400	0.200	0.233	117	0.234	117	70-130	0	35	mg/kg	07.24.19 02:37	
o-Xylene	<0.00200	0.100	0.111	111	0.111	111	70-130	0	35	mg/kg	07.24.19 02:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		99		98		70-130	%	07.24.19 02:37
4-Bromofluorobenzene	102		112		110		70-130	%	07.24.19 02:37

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3096349 | Matrix: Soil | Date Prep: 07.23.19
Parent Sample Id: 631730-001 | MS Sample Id: 631730-001 S | MSD Sample Id: 631730-001 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	0.0965	97	0.0938	94	70-130	3	35	mg/kg	07.24.19 01:03	
Toluene	<0.00200	0.100	0.0884	88	0.0874	88	70-130	1	35	mg/kg	07.24.19 01:03	
Ethylbenzene	<0.00200	0.100	0.0820	82	0.0794	80	70-130	3	35	mg/kg	07.24.19 01:03	
m,p-Xylenes	<0.00400	0.200	0.160	80	0.159	80	70-130	1	35	mg/kg	07.24.19 01:03	
o-Xylene	<0.00200	0.100	0.0763	76	0.0778	78	70-130	2	35	mg/kg	07.24.19 01:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		98		70-130	%	07.24.19 01:03
4-Bromofluorobenzene	92		107		70-130	%	07.24.19 01:03

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

Final 1.000

XENCO LABORATORIES

Chain of Custody

Work Order No: 631733

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432) 704-5440 EL Paso,TX (915) 585-3443 Lubbock,TX (806) 794-1296 Craslbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701 www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental	Company Name:	XTO
Address:	3300 North A Street	Address:	3104 E. Greene Street
City, State ZIP:	Midland TX 79705	City, State ZIP:	Carlsbad NM 88220
Phone:	432 236 3849	Email:	abyers@ltenv.com

Work Order Comments

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

Project Name:	JRU 48	Turn Around	
Project Number:	012918032	Routine ☐	
Project Location	Rural Eddy County	Rush: Same day	
Sampler's Name:	Anna Byers	Due Date:	
PO #:	22P-1142 & 22P-2556	Quote #:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	3.3 | 3.1	Thermometer ID	88
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Total Containers:	8

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	Pres. Code	TPH (EPA 8015)	BTEx (EPA 8021)	Chloride (EPA 300.0)	Sample Comments
	PH02B	S	7/19/19	1340	10'	1		X	X	X	

ANALYSIS REQUEST

Preservative Codes

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

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

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

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
1	Anna Byers	FedEx	07/22/2019 9:25
3			7/22/19 14:19
5			

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
2			07/22/2019 10:10
4			7/23/19 12:15
6			

Revised Date 022619 Rev. 2019.1

Analytical Report 632028

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU 48

0121918032

26-JUL-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)

26-JUL-19

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

Reference: XENCO Report No(s): **632028**
JRU 48
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) 632028. 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. 632028 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
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Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

Sample Cross Reference 632028

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP01	S	07-23-19 12:50		632028-001
SP02	S	07-23-19 12:55		632028-002
SP03	S	07-23-19 13:05		632028-003
SP04	S	07-23-19 13:20		632028-004

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 48

Project ID: *0121918032*
Work Order Number(s): *632028*

Report Date: *26-JUL-19*
Date Received: *07/25/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3096644 BTEX by EPA 8021B

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

Certificate of Analysis Summary 632028

LT Environmental, Inc., Arvada, CO

Project Name: JRU 48

Project Id: 0121918032
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Thu Jul-25-19 11:25 am
Report Date: 26-JUL-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	632028-001		632028-002		632028-003		632028-004					
	Field Id:	SP01		SP02		SP03		SP04					
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Jul-23-19 12:50		Jul-23-19 12:55		Jul-23-19 13:05		Jul-23-19 13:20					
BTEX by EPA 8021B	***Extracted:***	Jul-25-19 15:00		Jul-25-19 15:00		Jul-25-19 15:00		Jul-25-19 15:00					
	Analyzed:	Jul-26-19 03:57		Jul-26-19 04:17		Jul-26-19 04:37		Jul-26-19 04:57					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202				
Toluene		<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202				
Ethylbenzene		<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202				
m,p-Xylenes		<0.00398	0.00398	<0.00398	0.00398	<0.00401	0.00401	<0.00403	0.00403				
o-Xylene		<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202				
Total Xylenes		<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202				
Total BTEX		<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202				
Chloride by EPA 300	***Extracted:***	Jul-25-19 16:15		Jul-25-19 16:15		Jul-25-19 16:15		Jul-25-19 16:15					
	Analyzed:	Jul-25-19 22:17		Jul-25-19 22:23		Jul-25-19 22:42		Jul-25-19 22:49					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		5.74	5.00	167	5.05	10.8	5.03	20.3	4.96				
TPH by SW8015 Mod	***Extracted:***	Jul-25-19 16:00		Jul-25-19 16:00		Jul-25-19 16:00		Jul-25-19 16:00					
	Analyzed:	Jul-26-19 06:27		Jul-26-19 06:51		Jul-26-19 07:16		Jul-26-19 07:40					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		<15.0	15.0	51.2	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				
Total TPH		<15.0	15.0	51.2	15.0	<15.0	15.0	<15.0	15.0				
Total GRO-DRO		<15.0	15.0	51.2	15.0	<15.0	15.0	<15.0	15.0				

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

Jessica Kramer
Project Assistant

Final 1.000

Certificate of Analytical Results 632028

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SP01**	Matrix:	Soil	Date Received:	07.25.19 11.25
Lab Sample Id:	632028-001	Date Collected:	07.23.19 12.50		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.25.19 16.15	Basis:	Wet Weight
Seq Number:	3096552				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5.74**	5.00	mg/kg	07.25.19 22.17		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.25.19 16.00	Basis:	Wet Weight
Seq Number:	3096594				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.26.19 06.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.26.19 06.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.26.19 06.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.26.19 06.27	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.26.19 06.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	07.26.19 06.27	
o-Terphenyl	84-15-1	87	%	70-135	07.26.19 06.27	

Certificate of Analytical Results 632028

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SP01**	Matrix:	Soil	Date Received:	07.25.19 11.25
Lab Sample Id:	632028-001	Date Collected:	07.23.19 12.50		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.25.19 15.00	Basis:	Wet Weight
Seq Number:	3096644				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.26.19 03.57	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.26.19 03.57	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.26.19 03.57	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.26.19 03.57	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.26.19 03.57	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.26.19 03.57	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.26.19 03.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	07.26.19 03.57	
4-Bromofluorobenzene	460-00-4	84	%	70-130	07.26.19 03.57	

Certificate of Analytical Results 632028

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SP02**	Matrix:	Soil	Date Received:	07.25.19 11.25
Lab Sample Id:	632028-002	Date Collected:	07.23.19 12.55		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.25.19 16.15	Basis:	Wet Weight
Seq Number:	3096552				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**167**	5.05	mg/kg	07.25.19 22.23		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.25.19 16.00	Basis:	Wet Weight
Seq Number:	3096594				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.26.19 06.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	**51.2**	15.0	mg/kg	07.26.19 06.51		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.26.19 06.51	U	1
Total TPH	PHC635	**51.2**	15.0	mg/kg	07.26.19 06.51		1
Total GRO-DRO	PHC628	**51.2**	15.0	mg/kg	07.26.19 06.51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	07.26.19 06.51	
o-Terphenyl	84-15-1	76	%	70-135	07.26.19 06.51	

Certificate of Analytical Results 632028

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SP02**	Matrix:	Soil	Date Received:	07.25.19 11.25
Lab Sample Id:	632028-002	Date Collected:	07.23.19 12.55		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.25.19 15.00	Basis:	Wet Weight
Seq Number:	3096644				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.26.19 04.17	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.26.19 04.17	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.26.19 04.17	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.26.19 04.17	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.26.19 04.17	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.26.19 04.17	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.26.19 04.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	07.26.19 04.17	
1,4-Difluorobenzene	540-36-3	102	%	70-130	07.26.19 04.17	

Certificate of Analytical Results 632028

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SP03**	Matrix:	Soil	Date Received:	07.25.19 11.25
Lab Sample Id:	632028-003	Date Collected:	07.23.19 13.05		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.25.19 16.15	Basis:	Wet Weight
Seq Number:	3096552				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**10.8**	5.03	mg/kg	07.25.19 22.42		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.25.19 16.00	Basis:	Wet Weight
Seq Number:	3096594				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.26.19 07.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.26.19 07.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.26.19 07.16	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.26.19 07.16	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.26.19 07.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	07.26.19 07.16	
o-Terphenyl	84-15-1	77	%	70-135	07.26.19 07.16	

Certificate of Analytical Results 632028

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SP03**	Matrix:	Soil	Date Received:	07.25.19 11.25
Lab Sample Id:	632028-003	Date Collected:	07.23.19 13.05		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.25.19 15.00	Basis:	Wet Weight
Seq Number:	3096644				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.26.19 04.37	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.26.19 04.37	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.26.19 04.37	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.26.19 04.37	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.26.19 04.37	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.26.19 04.37	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.26.19 04.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	07.26.19 04.37	
1,4-Difluorobenzene	540-36-3	104	%	70-130	07.26.19 04.37	

Certificate of Analytical Results 632028

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SP04**	Matrix:	Soil	Date Received:	07.25.19 11.25
Lab Sample Id:	632028-004	Date Collected:	07.23.19 13.20		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.25.19 16.15	Basis:	Wet Weight
Seq Number:	3096552				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**20.3**	4.96	mg/kg	07.25.19 22.49		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.25.19 16.00	Basis:	Wet Weight
Seq Number:	3096594				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.26.19 07.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.26.19 07.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.26.19 07.40	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.26.19 07.40	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.26.19 07.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	07.26.19 07.40	
o-Terphenyl	84-15-1	79	%	70-135	07.26.19 07.40	

Certificate of Analytical Results 632028

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SP04**	Matrix:	Soil	Date Received:	07.25.19 11.25
Lab Sample Id:	632028-004	Date Collected:	07.23.19 13.20		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.25.19 15.00	Basis:	Wet Weight
Seq Number:	3096644				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	07.26.19 04.57	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	07.26.19 04.57	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	07.26.19 04.57	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	07.26.19 04.57	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	07.26.19 04.57	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	07.26.19 04.57	U	1
Total BTEX		<0.00202	0.00202	mg/kg	07.26.19 04.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	109	%	70-130	07.26.19 04.57	
1,4-Difluorobenzene	540-36-3	102	%	70-130	07.26.19 04.57	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 632028

LT Environmental, Inc.

JRU 48

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096552 — Matrix: Solid — Date Prep: 07.25.19
MB Sample Id: 7682868-1-BLK — LCS Sample Id: 7682868-1-BKS — LCSD Sample Id: 7682868-1-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	253	101	253	101	90-110	0	20	mg/kg	07.25.19 21:33	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096552 — Matrix: Soil — Date Prep: 07.25.19
Parent Sample Id: 631827-010 — MS Sample Id: 631827-010 S — MSD Sample Id: 631827-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	268	251	514	98	516	99	90-110	0	20	mg/kg	07.25.19 21:52	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096552 — Matrix: Soil — Date Prep: 07.25.19
Parent Sample Id: 632029-004 — MS Sample Id: 632029-004 S — MSD Sample Id: 632029-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	24.4	249	278	102	278	102	90-110	0	20	mg/kg	07.25.19 23:20	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3096594 — Matrix: Solid — Date Prep: 07.25.19
MB Sample Id: 7682826-1-BLK — LCS Sample Id: 7682826-1-BKS — LCSD Sample Id: 7682826-1-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	890	89	856	86	70-135	4	20	mg/kg	07.25.19 23:39	
Diesel Range Organics (DRO)	<8.13	1000	1060	106	1000	100	70-135	6	20	mg/kg	07.25.19 23:39	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	82		82		82		70-135	%	07.25.19 23:39
o-Terphenyl	87		95		98		70-135	%	07.25.19 23:39

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

QC Summary 632028

LT Environmental, Inc.

JRU 48

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3096594 | Matrix: Soil | Date Prep: 07.25.19
Parent Sample Id: 631897-001 | MS Sample Id: 631897-001 S | MSD Sample Id: 631897-001 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)	254	998	1120	87	1060	81	70-135	6	20	mg/kg	07.26.19 00:51	
Diesel Range Organics (DRO)	1280	998	2040	76	2060	78	70-135	1	20	mg/kg	07.26.19 00:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	83		76		70-135	%	07.26.19 00:51
o-Terphenyl	94		89		70-135	%	07.26.19 00:51

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3096644 | Matrix: Solid | Date Prep: 07.25.19
MB Sample Id: 7682807-1-BLK | LCS Sample Id: 7682807-1-BKS | LCSD Sample Id: 7682807-1-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	0.101	101	0.108	108	70-130	7	35	mg/kg	07.26.19 01:57	
Toluene	<0.00200	0.100	0.0979	98	0.105	105	70-130	7	35	mg/kg	07.26.19 01:57	
Ethylbenzene	<0.00200	0.100	0.113	113	0.118	118	70-130	4	35	mg/kg	07.26.19 01:57	
m,p-Xylenes	<0.00400	0.200	0.232	116	0.243	122	70-130	5	35	mg/kg	07.26.19 01:57	
o-Xylene	<0.00200	0.100	0.110	110	0.119	119	70-130	8	35	mg/kg	07.26.19 01:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		99		104		70-130	%	07.26.19 01:57
4-Bromofluorobenzene	95		109		123		70-130	%	07.26.19 01:57

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3096644 | Matrix: Soil | Date Prep: 07.25.19
Parent Sample Id: 632028-002 | MS Sample Id: 632028-002 S | MSD Sample Id: 632028-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0969	96	0.0977	97	70-130	1	35	mg/kg	07.26.19 02:37	
Toluene	<0.00202	0.101	0.0929	92	0.0936	93	70-130	1	35	mg/kg	07.26.19 02:37	
Ethylbenzene	<0.00202	0.101	0.100	99	0.102	101	70-130	2	35	mg/kg	07.26.19 02:37	
m,p-Xylenes	<0.00404	0.202	0.205	101	0.209	103	70-130	2	35	mg/kg	07.26.19 02:37	
o-Xylene	<0.00202	0.101	0.0999	99	0.103	102	70-130	3	35	mg/kg	07.26.19 02:37	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		101		70-130	%	07.26.19 02:37
4-Bromofluorobenzene	116		122		70-130	%	07.26.19 02:37

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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

XENCO LABORATORIES

Chain of Custody

Work Order No: E372028

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

www.xenco.com Page 1 of 1

Project Manager:	DAN MOIR	Bill to: (if different)	KYLE LITTRELL
Company Name:	LT ENVIRONMENTAL	Company Name:	XTO
Address:	3300 North A Street	Address:	3104 E. Greene Street
City, State ZIP:	Midland TX 79705	City, State ZIP:	Carlsbad NM 88220
Phone:	432 236 3849	Email:	abyers@ltenv.com & dmoir@ltenv.com

Work Order Comments

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

Project Name:	JRU 48	Turn Around	
Project Number:	012918032	Routine ☐	
P.O. Number:	2RP-1142 & 2RP-2586	Rush: 2 day	
Sampler's Name:	Anna Byers	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.4 10.4	Thermometer ID:	
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes ~~No~~ N/A	Correction Factor:	-0.1
Sample Custody Seals:	Yes No N/A	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Sample Comments
SP01	S	7/23/19	1250	—	1	X	X	X	soil pile
SP02	S	↓	1255	—	1	X	X	X	↓
SP03	S		1305	—	1	X	X	X	
SP04	S	↓	1320	—	1	X	X	X	

ANALYSIS REQUEST

Work Order Notes

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Anna Byers		7.24.19 900	2		7/24/19 9:20
3				4		7/25/19 11:15
5				6		

Revised Date 051418 Rev. 2018.1

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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Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Analytical Report 632159

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU 48

012918032

29-JUL-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)

29-JUL-19

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

Reference: XENCO Report No(s): **632159**
JRU 48
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) 632159. 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. 632159 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 632159

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH03	S	07-23-19 12:00	12 ft	632159-001
PH03A	S	07-23-19 12:35	18 ft	632159-002
PH04	S	07-23-19 14:05	6 ft	632159-003
PH04A	S	07-23-19 15:15	20 ft	632159-004

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 48

Project ID: *012918032*
Work Order Number(s): *632159*

Report Date: *29-JUL-19*
Date Received: *07/26/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3096698 Chloride by EPA 300
Analyst prepared the Matrix Spike and Matrix Spike Duplicate as 500ppm.

Batch: LBA-3096781 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: 632159-001.

Certificate of Analysis Summary 632159

LT Environmental, Inc., Arvada, CO

Project Name: JRU 48

Project Id: 012918032
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Fri Jul-26-19 11:42 am
Report Date: 29-JUL-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	632159-001		632159-002		632159-003		632159-004					
	Field Id:	PH03		PH03A		PH04		PH04A					
	Depth:	12- ft		18- ft		6- ft		20- ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Jul-23-19 12:00		Jul-23-19 12:35		Jul-23-19 14:05		Jul-23-19 15:15					
BTEX by EPA 8021B	***Extracted:***	Jul-26-19 11:50		Jul-26-19 11:50		Jul-26-19 11:50		Jul-26-19 11:50					
	Analyzed:	Jul-27-19 17:29		Jul-27-19 17:49		Jul-27-19 18:10		Jul-27-19 18:30					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00201	0.00201	<0.00200	0.00200	1.75 D	0.0402	<0.00202	0.00202				
Toluene		<0.00201	0.00201	<0.00200	0.00200	0.386 D	0.0402	<0.00202	0.00202				
Ethylbenzene		<0.00201	0.00201	<0.00200	0.00200	0.491 D	0.0402	<0.00202	0.00202				
m,p-Xylenes		0.0371	0.00402	<0.00400	0.00400	4.12 D	0.0803	<0.00404	0.00404				
o-Xylene		<0.00201	0.00201	<0.00200	0.00200	0.680 D	0.0402	<0.00202	0.00202				
Total Xylenes		0.0371	0.00201	<0.00200	0.00200	4.80	0.0402	<0.00202	0.00202				
Total BTEX		0.0371	0.00201	<0.00200	0.00200	7.43	0.0402	<0.00202	0.00202				
Chloride by EPA 300	***Extracted:***	Jul-26-19 13:50		Jul-26-19 13:50		Jul-26-19 13:50		Jul-26-19 13:50					
	Analyzed:	Jul-26-19 22:16		Jul-26-19 22:21		Jul-26-19 22:27		Jul-26-19 22:48					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		2080	25.2	7600	49.8	7170	50.0	12900	100				
TPH by SW8015 Mod	***Extracted:***	Jul-26-19 13:00		Jul-26-19 13:00		Jul-26-19 13:00		Jul-26-19 13:00					
	Analyzed:	Jul-27-19 02:05		Jul-27-19 02:28		Jul-27-19 02:52		Jul-27-19 03:15					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		107	15.0	<14.9	14.9	2590	74.9	<15.0	15.0				
Diesel Range Organics (DRO)		697	15.0	24.4	14.9	7680	74.9	28.3	15.0				
Motor Oil Range Hydrocarbons (MRO)		30.7	15.0	<14.9	14.9	535	74.9	<15.0	15.0				
Total TPH		835	15.0	24.4	14.9	10800	74.9	28.3	15.0				
Total GRO-DRO		804	15.0	24.4	14.9	10300	74.9	28.3	15.0				

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

Jessica Kramer
Project Assistant

Final 1.000

Certificate of Analytical Results 632159

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	07.26.19 11.42
Lab Sample Id:	632159-001	Date Collected:	07.23.19 12.00	Sample Depth:	12 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.26.19 13.50	Basis:	Wet Weight
Seq Number:	3096698				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2080**	25.2	mg/kg	07.26.19 22.16		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.26.19 13.00	Basis:	Wet Weight
Seq Number:	3096713				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**107**	15.0	mg/kg	07.27.19 02.05		1
Diesel Range Organics (DRO)	C10C28DRO	**697**	15.0	mg/kg	07.27.19 02.05		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**30.7**	15.0	mg/kg	07.27.19 02.05		1
Total TPH	PHC635	**835**	15.0	mg/kg	07.27.19 02.05		1
Total GRO-DRO	PHC628	**804**	15.0	mg/kg	07.27.19 02.05		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	07.27.19 02.05	
o-Terphenyl	84-15-1	80	%	70-135	07.27.19 02.05	

Certificate of Analytical Results 632159

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	07.26.19 11.42
Lab Sample Id:	632159-001	Date Collected:	07.23.19 12.00	Sample Depth:	12 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.26.19 11.50	Basis:	Wet Weight
Seq Number:	3096781				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.27.19 17.29	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.27.19 17.29	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.27.19 17.29	U	1
m,p-Xylenes	179601-23-1	**0.0371**	0.00402	mg/kg	07.27.19 17.29		1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.27.19 17.29	U	1
Total Xylenes	1330-20-7	**0.0371**	0.00201	mg/kg	07.27.19 17.29		1
Total BTEX		**0.0371**	0.00201	mg/kg	07.27.19 17.29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	185	%	70-130	07.27.19 17.29	**
1,4-Difluorobenzene	540-36-3	100	%	70-130	07.27.19 17.29	

Certificate of Analytical Results 632159

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	07.26.19 11.42
Lab Sample Id:	632159-002	Date Collected:	07.23.19 12.35	Sample Depth:	18 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.26.19 13.50	Basis:	Wet Weight
Seq Number:	3096698				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7600**	49.8	mg/kg	07.26.19 22.21		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.26.19 13.00	Basis:	Wet Weight
Seq Number:	3096713				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.27.19 02.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	**24.4**	14.9	mg/kg	07.27.19 02.28		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	07.27.19 02.28	U	1
Total TPH	PHC635	**24.4**	14.9	mg/kg	07.27.19 02.28		1
Total GRO-DRO	PHC628	**24.4**	14.9	mg/kg	07.27.19 02.28		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	07.27.19 02.28	
o-Terphenyl	84-15-1	73	%	70-135	07.27.19 02.28	

Certificate of Analytical Results 632159

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	07.26.19 11.42
Lab Sample Id:	632159-002	Date Collected:	07.23.19 12.35	Sample Depth:	18 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.26.19 11.50	Basis:	Wet Weight
Seq Number:	3096781				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.27.19 17.49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.27.19 17.49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.27.19 17.49	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.27.19 17.49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.27.19 17.49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.27.19 17.49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.27.19 17.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	07.27.19 17.49	
4-Bromofluorobenzene	460-00-4	118	%	70-130	07.27.19 17.49	

Certificate of Analytical Results 632159

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH04**	Matrix:	Soil	Date Received:	07.26.19 11.42
Lab Sample Id:	632159-003	Date Collected:	07.23.19 14.05	Sample Depth:	6 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.26.19 13.50	Basis:	Wet Weight
Seq Number:	3096698				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7170**	50.0	mg/kg	07.26.19 22.27		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.26.19 13.00	Basis:	Wet Weight
Seq Number:	3096713				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**2590**	74.9	mg/kg	07.27.19 02.52		5
Diesel Range Organics (DRO)	C10C28DRO	**7680**	74.9	mg/kg	07.27.19 02.52		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**535**	74.9	mg/kg	07.27.19 02.52		5
Total TPH	PHC635	**10800**	74.9	mg/kg	07.27.19 02.52		5
Total GRO-DRO	PHC628	**10300**	74.9	mg/kg	07.27.19 02.52		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	07.27.19 02.52	
o-Terphenyl	84-15-1	121	%	70-135	07.27.19 02.52	

Certificate of Analytical Results 632159

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH04**	Matrix:	Soil	Date Received:	07.26.19 11.42
Lab Sample Id:	632159-003	Date Collected:	07.23.19 14.05	Sample Depth:	6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.26.19 11.50	Basis:	Wet Weight
Seq Number:	3096781				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**1.75**	0.0402	mg/kg	07.29.19 16.19	D	20
Toluene	108-88-3	**0.386**	0.0402	mg/kg	07.29.19 16.19	D	20
Ethylbenzene	100-41-4	**0.491**	0.0402	mg/kg	07.29.19 16.19	D	20
m,p-Xylenes	179601-23-1	**4.12**	0.0803	mg/kg	07.29.19 16.19	D	20
o-Xylene	95-47-6	**0.680**	0.0402	mg/kg	07.29.19 16.19	D	20
Total Xylenes	1330-20-7	**4.80**	0.0402	mg/kg	07.29.19 16.19		20
Total BTEX		**7.43**	0.0402	mg/kg	07.29.19 16.19		20

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	97	%	70-130	07.27.19 18.10	
4-Bromofluorobenzene	460-00-4	111	%	70-130	07.27.19 18.10	

Certificate of Analytical Results 632159

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH04A**	Matrix:	Soil	Date Received:	07.26.19 11.42
Lab Sample Id:	632159-004	Date Collected:	07.23.19 15.15	Sample Depth:	20 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.26.19 13.50	Basis:	Wet Weight
Seq Number:	3096698				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**12900**	100	mg/kg	07.26.19 22.48		20

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.26.19 13.00	Basis:	Wet Weight
Seq Number:	3096713				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.27.19 03.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	**28.3**	15.0	mg/kg	07.27.19 03.15		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.27.19 03.15	U	1
Total TPH	PHC635	**28.3**	15.0	mg/kg	07.27.19 03.15		1
Total GRO-DRO	PHC628	**28.3**	15.0	mg/kg	07.27.19 03.15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	07.27.19 03.15	
o-Terphenyl	84-15-1	73	%	70-135	07.27.19 03.15	

Certificate of Analytical Results 632159

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH04A**	Matrix:	Soil	Date Received:	07.26.19 11.42
Lab Sample Id:	632159-004	Date Collected:	07.23.19 15.15	Sample Depth:	20 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.26.19 11.50	Basis:	Wet Weight
Seq Number:	3096781				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	07.27.19 18.30	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	07.27.19 18.30	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	07.27.19 18.30	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	07.27.19 18.30	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	07.27.19 18.30	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	07.27.19 18.30	U	1
Total BTEX		<0.00202	0.00202	mg/kg	07.27.19 18.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	07.27.19 18.30	
4-Bromofluorobenzene	460-00-4	113	%	70-130	07.27.19 18.30	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 632159

LT Environmental, Inc.

JRU 48

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096698 — Matrix: Solid — Date Prep: 07.26.19
MB Sample Id: 7682941-1-BLK — LCS Sample Id: 7682941-1-BKS — LCSD Sample Id: 7682941-1-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	255	102	258	103	90-110	1	20	mg/kg	07.26.19 21:05	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096698 — Matrix: Soil — Date Prep: 07.26.19
Parent Sample Id: 632148-083 — MS Sample Id: 632148-083 S — MSD Sample Id: 632148-083 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	128	501	638	102	636	101	90-110	0	20	mg/kg	07.26.19 21:22	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096698 — Matrix: Soil — Date Prep: 07.26.19
Parent Sample Id: 632158-004 — MS Sample Id: 632158-004 S — MSD Sample Id: 632158-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	579	502	1050	94	1040	92	90-110	1	20	mg/kg	07.26.19 22:38	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3096713 — Matrix: Solid — Date Prep: 07.26.19
MB Sample Id: 7682977-1-BLK — LCS Sample Id: 7682977-1-BKS — LCSD Sample Id: 7682977-1-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	980	98	890	89	70-135	10	20	mg/kg	07.26.19 22:55	
Diesel Range Organics (DRO)	<8.13	1000	1070	107	1020	102	70-135	5	20	mg/kg	07.26.19 22:55	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	80		94		90		70-135	%	07.26.19 22:55
o-Terphenyl	93		97		96		70-135	%	07.26.19 22:55

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

QC Summary 632159

LT Environmental, Inc.

JRU 48

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3096713 | Matrix: Soil | Date Prep: 07.26.19
Parent Sample Id: 632158-001 | MS Sample Id: 632158-001 S | MSD Sample Id: 632158-001 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)	8.71	999	940	93	912	91	70-135	3	20	mg/kg	07.27.19 00:06	
Diesel Range Organics (DRO)	35.4	999	1050	102	983	95	70-135	7	20	mg/kg	07.27.19 00:06	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	84		77		70-135	%	07.27.19 00:06
o-Terphenyl	85		79		70-135	%	07.27.19 00:06

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3096781 | Matrix: Solid | Date Prep: 07.26.19
MB Sample Id: 7682919-1-BLK | LCS Sample Id: 7682919-1-BKS | LCSD Sample Id: 7682919-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0945	95	0.104	104	70-130	10	35	mg/kg	07.27.19 09:09	
Toluene	<0.000456	0.100	0.0890	89	0.0946	95	70-130	6	35	mg/kg	07.27.19 09:09	
Ethylbenzene	<0.000565	0.100	0.0892	89	0.0931	93	70-130	4	35	mg/kg	07.27.19 09:09	
m,p-Xylenes	<0.00101	0.200	0.180	90	0.186	93	70-130	3	35	mg/kg	07.27.19 09:09	
o-Xylene	<0.000344	0.100	0.0943	94	0.0974	97	70-130	3	35	mg/kg	07.27.19 09:09	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		99		101		70-130	%	07.27.19 09:09
4-Bromofluorobenzene	101		106		102		70-130	%	07.27.19 09:09

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3096781 | Matrix: Soil | Date Prep: 07.26.19
Parent Sample Id: 631660-041 | MS Sample Id: 631660-041 S | MSD Sample Id: 631660-041 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	0.0795	80	0.0761	76	70-130	4	35	mg/kg	07.27.19 09:50	
Toluene	<0.00200	0.100	0.0704	70	0.0697	70	70-130	1	35	mg/kg	07.27.19 09:50	
Ethylbenzene	<0.00200	0.100	0.0709	71	0.0705	71	70-130	1	35	mg/kg	07.27.19 09:50	
m,p-Xylenes	<0.00101	0.200	0.140	70	0.141	71	70-130	1	35	mg/kg	07.27.19 09:50	
o-Xylene	<0.00200	0.100	0.0728	73	0.0737	74	70-130	1	35	mg/kg	07.27.19 09:50	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		103		70-130	%	07.27.19 09:50
4-Bromofluorobenzene	103		109		70-130	%	07.27.19 09:50

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

XENCO LABORATORIES

Chain of Custody

Work Order No: 632159

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

www.xenco.com Page 1 of 1

Project Manager:	DAN MOIR	Bill to: (if different)	Kyle Littrell
Company Name:	LT ENVIRONMENTAL	Company Name:	XTO
Address:	3300 North A Street	Address:	3104 E. Greene Street
City, State ZIP:	Midland TX 79705	City, State ZIP:	Carlsbad NM 88220
Phone:	432 236 3849	Email:	abyers@ltenv.com & dmoir@ltenv.com

Work Order Comments

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

Project Name:	JRU 48	Turn Around	
Project Number:	012918032	Routine ☐	
P.O. Number:	2RP-1142 & 2RP-2556	Rush: same day	
Sampler's Name:	Anna Byers	Due Date:	

SAMPLE RECEIPT				
Temperature (°C):	0.4/0.2	Temp Blank: Yes (No)	Wet Ice: (Yes) No	
Received Intact:	(Yes) No	Thermometer ID:	VB	
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No (N/A)	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
PH03	S	7/23/19	1200	12'	1	X	X	X
PH03A	S		1235	18'	1	X	X	X
PH04	S		1405	6'	1	X	X	X
PH04A	S		1515	20'	1	X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Anna Byers		7/24/19 16:50	2	FedEx	7/25/19 14:00
3			4	BTEX	7/26/19 1142
5			6		

Revised Date 051418 Rev. 2018.1

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

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 07/26/2019 11:42:00 AM

Work Order #: 632159

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 Date: 07/26/2019
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 07/29/2019
Jessica Kramer

Analytical Report 632384

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU 48

012918032

31-JUL-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), North Carolina (681)

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-JUL-19

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

Reference: XENCO Report No(s): **632384**
JRU 48
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) 632384. 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. 632384 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 632384

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW11	S	07-26-19 10:10	13.5 - 18 ft	632384-001
SW12	S	07-26-19 10:15	9 - 13.5 ft	632384-002
SW13	S	07-26-19 10:20	4.5 - 9 ft	632384-003
SW14	S	07-26-19 10:25	0.5 - 4.5 ft	632384-004
SW15	S	07-26-19 13:15	13.5 - 18 ft	632384-005
SW16	S	07-26-19 15:20	9 - 13.5 ft	632384-006
SW17	S	07-26-19 15:25	4.5 - 9 ft	632384-007
SW18	S	07-26-19 15:30	0.5 - 4.5 ft	632384-008
SW19	S	07-26-19 15:35	0.5 - 4.5 ft	632384-009

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 48

Project ID: *012918032*
Work Order Number(s): *632384*

Report Date: *31-JUL-19*
Date Received: *07/30/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3097062 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Lab Sample ID 632384-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
Benzene recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.
Samples in the analytical batch are: 632384-001, -002, -003, -004, -005, -006, -007, -008, -009.
The Laboratory Control Sample for Benzene is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 632384

LT Environmental, Inc., Arvada, CO

Project Name: JRU 48

Project Id: 012918032
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Tue Jul-30-19 11:45 am
Report Date: 31-JUL-19
Project Manager: Jessica Kramer

Analysis Requested		632384-001		632384-002		632384-003		632384-004		632384-005		632384-006	
	Field Id:	SW11		SW12		SW13		SW14		SW15		SW16	
	Depth:	13.5-18 ft		9-13.5 ft		4.5-9 ft		0.5-4.5 ft		13.5-18 ft		9-13.5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-26-19 10:10		Jul-26-19 10:15		Jul-26-19 10:20		Jul-26-19 10:25		Jul-26-19 13:15		Jul-26-19 15:20	
BTEX by EPA 8021B	*Extracted:*	** ** ** **		** ** ** **		** ** ** **		** ** ** **		** ** ** **		** ** ** **	
	Analyzed:	Jul-31-19 07:18		Jul-31-19 07:39		Jul-31-19 07:59		Jul-31-19 08:19		Jul-31-19 08:39		Jul-31-19 08:59	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00198	0.00198	<0.00197	0.00197
Toluene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00198	0.00198	<0.00197	0.00197
Ethylbenzene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00198	0.00198	<0.00197	0.00197
m,p-Xylenes		<0.00400	0.00400	<0.00398	0.00398	<0.00398	0.00398	<0.00396	0.00396	<0.00396	0.00396	<0.00394	0.00394
o-Xylene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00198	0.00198	<0.00197	0.00197
Total Xylenes		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00198	0.00198	<0.00197	0.00197
Total BTEX		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00198	0.00198	<0.00197	0.00197
Chloride by EPA 300	*Extracted:*	Jul-30-19 16:30		Jul-30-19 16:30		Jul-30-19 16:30		Jul-30-19 16:30		Jul-30-19 16:30		Jul-30-19 16:30	
	Analyzed:	Jul-30-19 19:22		Jul-30-19 19:29		Jul-30-19 19:35		Jul-30-19 19:54		Jul-30-19 19:41		Jul-30-19 19:48	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		3770	25.0	3430	24.8	6.65	4.98	6.67	5.03	8120	50.2	1250	5.01
TPH by SW8015 Mod	*Extracted:*	Jul-30-19 14:00		Jul-30-19 14:00		Jul-30-19 14:00		Jul-30-19 14:00		Jul-30-19 14:00		Jul-30-19 14:00	
	Analyzed:	Jul-31-19 02:45		Jul-31-19 03:08		Jul-31-19 03:31		Jul-31-19 03:54		Jul-31-19 04:17		Jul-31-19 04:40	
	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	<14.9	14.9	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<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	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0

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Jessica Kramer
Project Assistant

Final 1.000

Certificate of Analysis Summary 632384

LT Environmental, Inc., Arvada, CO

Project Name: JRU 48

Project Id: 012918032
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Tue Jul-30-19 11:45 am
Report Date: 31-JUL-19
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	632384-007		632384-008		632384-009					
	Field Id:	SW17		SW18		SW19					
	Depth:	4.5-9 ft		0.5-4.5 ft		0.5-4.5 ft					
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	Jul-26-19 15:25		Jul-26-19 15:30		Jul-26-19 15:35					
BTEX by EPA 8021B	*Extracted:*	** ** ** **		** ** ** **		** ** ** **					
	Analyzed:	Jul-31-19 09:19		Jul-31-19 09:39		Jul-31-19 10:00					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00197	0.00197	<0.00200	0.00200	<0.00200	0.00200				
Toluene		<0.00197	0.00197	<0.00200	0.00200	<0.00200	0.00200				
Ethylbenzene		<0.00197	0.00197	<0.00200	0.00200	<0.00200	0.00200				
m,p-Xylenes		<0.00394	0.00394	<0.00400	0.00400	<0.00400	0.00400				
o-Xylene		<0.00197	0.00197	<0.00200	0.00200	<0.00200	0.00200				
Total Xylenes		<0.00197	0.00197	<0.00200	0.00200	<0.00200	0.00200				
Total BTEX		<0.00197	0.00197	<0.00200	0.00200	<0.00200	0.00200				
Chloride by EPA 300	*Extracted:*	Jul-30-19 16:30		Jul-30-19 16:30		Jul-30-19 16:30					
	Analyzed:	Jul-30-19 20:13		Jul-30-19 20:19		Jul-30-19 20:38					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		504	4.96	<4.95	4.95	<4.99	4.99				
TPH by SW8015 Mod	*Extracted:*	Jul-30-19 14:00		Jul-30-19 14:00		Jul-30-19 14:00					
	Analyzed:	Jul-31-19 05:04		Jul-31-19 05:27		Jul-31-19 05:50					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		<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				
Total TPH		<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				

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Jessica Kramer
Project Assistant

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Certificate of Analytical Results 632384

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW11**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-001	Date Collected:	07.26.19 10.10	Sample Depth:	13.5 - 18 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 16.30	Basis:	Wet Weight
Seq Number:	3096964				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3770**	25.0	mg/kg	07.30.19 19.22		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 14.00	Basis:	Wet Weight
Seq Number:	3097002				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 02.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.31.19 02.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.31.19 02.45	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.31.19 02.45	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.31.19 02.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	07.31.19 02.45	
o-Terphenyl	84-15-1	108	%	70-135	07.31.19 02.45	

Certificate of Analytical Results 632384

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW11**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-001	Date Collected:	07.26.19 10.10	Sample Depth:	13.5 - 18 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 11.00	Basis:	Wet Weight
Seq Number:	3097062				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.31.19 07.18	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.31.19 07.18	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.31.19 07.18	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.31.19 07.18	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.31.19 07.18	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.31.19 07.18	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.31.19 07.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	07.31.19 07.18	
1,4-Difluorobenzene	540-36-3	78	%	70-130	07.31.19 07.18	

Certificate of Analytical Results 632384

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW12**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-002	Date Collected:	07.26.19 10.15	Sample Depth:	9 - 13.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 16.30	Basis:	Wet Weight
Seq Number:	3096964				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3430**	24.8	mg/kg	07.30.19 19.29		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 14.00	Basis:	Wet Weight
Seq Number:	3097002				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 03.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.31.19 03.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.31.19 03.08	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.31.19 03.08	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.31.19 03.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	07.31.19 03.08	
o-Terphenyl	84-15-1	105	%	70-135	07.31.19 03.08	

Certificate of Analytical Results 632384

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW12**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-002	Date Collected:	07.26.19 10.15	Sample Depth:	9 - 13.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 11.00	Basis:	Wet Weight
Seq Number:	3097062				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.31.19 07.39	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.31.19 07.39	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.31.19 07.39	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.31.19 07.39	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.31.19 07.39	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.31.19 07.39	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.31.19 07.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	07.31.19 07.39	
1,4-Difluorobenzene	540-36-3	96	%	70-130	07.31.19 07.39	

Certificate of Analytical Results 632384

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW13**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-003	Date Collected:	07.26.19 10.20	Sample Depth:	4.5 - 9 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 16.30	Basis:	Wet Weight
Seq Number:	3096964				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6.65**	4.98	mg/kg	07.30.19 19.35		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 14.00	Basis:	Wet Weight
Seq Number:	3097002				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 03.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.31.19 03.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.31.19 03.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.31.19 03.31	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.31.19 03.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	07.31.19 03.31	
o-Terphenyl	84-15-1	100	%	70-135	07.31.19 03.31	

Certificate of Analytical Results 632384

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW13**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-003	Date Collected:	07.26.19 10.20	Sample Depth:	4.5 - 9 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 11.00	Basis:	Wet Weight
Seq Number:	3097062				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.31.19 07.59	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.31.19 07.59	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.31.19 07.59	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.31.19 07.59	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.31.19 07.59	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.31.19 07.59	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.31.19 07.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	120	%	70-130	07.31.19 07.59	
1,4-Difluorobenzene	540-36-3	106	%	70-130	07.31.19 07.59	

Certificate of Analytical Results 632384

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW14**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-004	Date Collected:	07.26.19 10.25	Sample Depth:	0.5 - 4.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 16.30	Basis:	Wet Weight
Seq Number:	3096964				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6.67**	5.03	mg/kg	07.30.19 19.54		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 14.00	Basis:	Wet Weight
Seq Number:	3097002				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.31.19 03.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	07.31.19 03.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	07.31.19 03.54	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	07.31.19 03.54	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	07.31.19 03.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	07.31.19 03.54	
o-Terphenyl	84-15-1	106	%	70-135	07.31.19 03.54	

Certificate of Analytical Results 632384

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW14**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-004	Date Collected:	07.26.19 10.25	Sample Depth:	0.5 - 4.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 11.00	Basis:	Wet Weight
Seq Number:	3097062				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.31.19 08.19	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.31.19 08.19	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.31.19 08.19	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	07.31.19 08.19	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.31.19 08.19	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.31.19 08.19	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.31.19 08.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119	%	70-130	07.31.19 08.19	
1,4-Difluorobenzene	540-36-3	108	%	70-130	07.31.19 08.19	

Certificate of Analytical Results 632384

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW15**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-005	Date Collected:	07.26.19 13.15	Sample Depth:	13.5 - 18 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 16.30	Basis:	Wet Weight
Seq Number:	3096964				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8120**	50.2	mg/kg	07.30.19 19.41		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 14.00	Basis:	Wet Weight
Seq Number:	3097002				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 04.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.31.19 04.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.31.19 04.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.31.19 04.17	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.31.19 04.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	07.31.19 04.17	
o-Terphenyl	84-15-1	101	%	70-135	07.31.19 04.17	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW15**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-005	Date Collected:	07.26.19 13.15	Sample Depth:	13.5 - 18 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 11.00	Basis:	Wet Weight
Seq Number:	3097062				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.31.19 08.39	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.31.19 08.39	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.31.19 08.39	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	07.31.19 08.39	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.31.19 08.39	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.31.19 08.39	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.31.19 08.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	07.31.19 08.39	
1,4-Difluorobenzene	540-36-3	92	%	70-130	07.31.19 08.39	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW16**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-006	Date Collected:	07.26.19 15.20	Sample Depth:	9 - 13.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 16.30	Basis:	Wet Weight
Seq Number:	3096964				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1250**	5.01	mg/kg	07.30.19 19.48		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 14.00	Basis:	Wet Weight
Seq Number:	3097002				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 04.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.31.19 04.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.31.19 04.40	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.31.19 04.40	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.31.19 04.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	07.31.19 04.40	
o-Terphenyl	84-15-1	101	%	70-135	07.31.19 04.40	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW16**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-006	Date Collected:	07.26.19 15.20	Sample Depth:	9 - 13.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 11.00	Basis:	Wet Weight
Seq Number:	3097062				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00197	0.00197	mg/kg	07.31.19 08.59	U	1
Toluene	108-88-3	<0.00197	0.00197	mg/kg	07.31.19 08.59	U	1
Ethylbenzene	100-41-4	<0.00197	0.00197	mg/kg	07.31.19 08.59	U	1
m,p-Xylenes	179601-23-1	<0.00394	0.00394	mg/kg	07.31.19 08.59	U	1
o-Xylene	95-47-6	<0.00197	0.00197	mg/kg	07.31.19 08.59	U	1
Total Xylenes	1330-20-7	<0.00197	0.00197	mg/kg	07.31.19 08.59	U	1
Total BTEX		<0.00197	0.00197	mg/kg	07.31.19 08.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	07.31.19 08.59	
1,4-Difluorobenzene	540-36-3	102	%	70-130	07.31.19 08.59	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW17**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-007	Date Collected:	07.26.19 15.25	Sample Depth:	4.5 - 9 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 16.30	Basis:	Wet Weight
Seq Number:	3096964				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**504**	4.96	mg/kg	07.30.19 20.13		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 14.00	Basis:	Wet Weight
Seq Number:	3097002				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 05.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.31.19 05.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.31.19 05.04	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.31.19 05.04	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.31.19 05.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	07.31.19 05.04	
o-Terphenyl	84-15-1	97	%	70-135	07.31.19 05.04	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW17**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-007	Date Collected:	07.26.19 15.25	Sample Depth:	4.5 - 9 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 11.00	Basis:	Wet Weight
Seq Number:	3097062				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00197	0.00197	mg/kg	07.31.19 09.19	U	1
Toluene	108-88-3	<0.00197	0.00197	mg/kg	07.31.19 09.19	U	1
Ethylbenzene	100-41-4	<0.00197	0.00197	mg/kg	07.31.19 09.19	U	1
m,p-Xylenes	179601-23-1	<0.00394	0.00394	mg/kg	07.31.19 09.19	U	1
o-Xylene	95-47-6	<0.00197	0.00197	mg/kg	07.31.19 09.19	U	1
Total Xylenes	1330-20-7	<0.00197	0.00197	mg/kg	07.31.19 09.19	U	1
Total BTEX		<0.00197	0.00197	mg/kg	07.31.19 09.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	70-130	07.31.19 09.19	
1,4-Difluorobenzene	540-36-3	103	%	70-130	07.31.19 09.19	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW18**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-008	Date Collected:	07.26.19 15.30	Sample Depth:	0.5 - 4.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 16.30	Basis:	Wet Weight
Seq Number:	3096964				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	07.30.19 20.19	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 14.00	Basis:	Wet Weight
Seq Number:	3097002				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 05.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.31.19 05.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.31.19 05.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.31.19 05.27	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.31.19 05.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	07.31.19 05.27	
o-Terphenyl	84-15-1	97	%	70-135	07.31.19 05.27	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW18**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-008	Date Collected:	07.26.19 15.30	Sample Depth:	0.5 - 4.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 11.00	Basis:	Wet Weight
Seq Number:	3097062				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.31.19 09.39	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.31.19 09.39	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.31.19 09.39	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.31.19 09.39	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.31.19 09.39	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.31.19 09.39	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.31.19 09.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	07.31.19 09.39	
4-Bromofluorobenzene	460-00-4	113	%	70-130	07.31.19 09.39	

Certificate of Analytical Results 632384

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW19**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-009	Date Collected:	07.26.19 15.35	Sample Depth:	0.5 - 4.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 16.30	Basis:	Wet Weight
Seq Number:	3096964				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	07.30.19 20.38	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 14.00	Basis:	Wet Weight
Seq Number:	3097002				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 05.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.31.19 05.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.31.19 05.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.31.19 05.50	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.31.19 05.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	07.31.19 05.50	
o-Terphenyl	84-15-1	106	%	70-135	07.31.19 05.50	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW19**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632384-009	Date Collected:	07.26.19 15.35	Sample Depth:	0.5 - 4.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 11.00	Basis:	Wet Weight
Seq Number:	3097062				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.31.19 10.00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.31.19 10.00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.31.19 10.00	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.31.19 10.00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.31.19 10.00	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.31.19 10.00	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.31.19 10.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	07.31.19 10.00	
1,4-Difluorobenzene	540-36-3	87	%	70-130	07.31.19 10.00	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 632384

LT Environmental, Inc.

JRU 48

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096964 — Matrix: Solid — Date Prep: 07.30.19
MB Sample Id: 7683144-1-BLK — LCS Sample Id: 7683144-1-BKS — LCSD Sample Id: 7683144-1-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	264	106	264	106	90-110	0	20	mg/kg	07.30.19 18:13	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096964 — Matrix: Soil — Date Prep: 07.30.19
Parent Sample Id: 632071-001 — MS Sample Id: 632071-001 S — MSD Sample Id: 632071-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.27	252	316	124	318	125	90-110	1	20	mg/kg	07.31.19 09:02	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096964 — Matrix: Soil — Date Prep: 07.30.19
Parent Sample Id: 632384-004 — MS Sample Id: 632384-004 S — MSD Sample Id: 632384-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.67	252	271	105	271	105	90-110	0	20	mg/kg	07.30.19 20:00	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3097002 — Matrix: Solid — Date Prep: 07.30.19
MB Sample Id: 7683168-1-BLK — LCS Sample Id: 7683168-1-BKS — LCSD Sample Id: 7683168-1-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	893	89	871	87	70-135	2	20	mg/kg	07.30.19 18:57	
Diesel Range Organics (DRO)	<8.13	1000	1030	103	1010	101	70-135	2	20	mg/kg	07.30.19 18:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		114		104		70-135	%	07.30.19 18:57
o-Terphenyl	99		111		103		70-135	%	07.30.19 18:57

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

QC Summary 632384

LT Environmental, Inc.

JRU 48

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3097002 | Matrix: Soil | Date Prep: 07.30.19
Parent Sample Id: 632286-001 | MS Sample Id: 632286-001 S | MSD Sample Id: 632286-001 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)	16.5	999	961	95	827	81	70-135	15	20	mg/kg	07.30.19 21:42	
Diesel Range Organics (DRO)	70.2	999	931	86	950	88	70-135	2	20	mg/kg	07.30.19 21:42	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	89		97		70-135	%	07.30.19 21:42
o-Terphenyl	85		87		70-135	%	07.30.19 21:42

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3097062 | Matrix: Solid | Date Prep: 07.30.19
MB Sample Id: 7683122-1-BLK | LCS Sample Id: 7683122-1-BKS | LCSD Sample Id: 7683122-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0782	78	0.0930	93	70-130	17	35	mg/kg	07.31.19 05:19	
Toluene	<0.000456	0.100	0.0753	75	0.0909	91	70-130	19	35	mg/kg	07.31.19 05:19	
Ethylbenzene	<0.00200	0.100	0.0763	76	0.0927	93	70-130	19	35	mg/kg	07.31.19 05:19	
m,p-Xylenes	<0.00101	0.200	0.155	78	0.189	95	70-130	20	35	mg/kg	07.31.19 05:19	
o-Xylene	<0.000344	0.100	0.0823	82	0.100	100	70-130	19	35	mg/kg	07.31.19 05:19	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		101		101		70-130	%	07.31.19 05:19
4-Bromofluorobenzene	106		109		115		70-130	%	07.31.19 05:19

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3097062 | Matrix: Soil | Date Prep: 07.30.19
Parent Sample Id: 632384-001 | MS Sample Id: 632384-001 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0659	66	70-130	mg/kg	07.31.19 05:59	X
Toluene	<0.00200	0.0998	0.0746	75	70-130	mg/kg	07.31.19 05:59	
Ethylbenzene	<0.00200	0.0998	0.0799	80	70-130	mg/kg	07.31.19 05:59	
m,p-Xylenes	<0.00399	0.200	0.166	83	70-130	mg/kg	07.31.19 05:59	
o-Xylene	<0.00200	0.0998	0.0869	87	70-130	mg/kg	07.31.19 05:59	

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		70-130	%	07.31.19 05:59
4-Bromofluorobenzene	124		70-130	%	07.31.19 05:59

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

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

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

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

Chain of Custody

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432) 704-5440 EL Paso,TX (915) 585-3443 Lubbock,TX (806) 794-1296 Craslbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701 www.xenco.com

Work Order No: 633734

Page 1 of 1

Project Manager:	DAN MOIR	Bill to: (if different)	Kyle Littrell
Company Name:	LT ENVIRONMENTAL	Company Name:	XTO
Address:	3300 North A Street	Address:	3104 E. Greene Street
City, State ZIP:	Midland TX 79705	City, State ZIP:	Carlsbad NM 88220
Phone:		Email:	dmoir@ltenv.com & abyers@ltenv.com

Work Order Comments

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

Project Name:	JRU 48	Turn Around	
Project Number:	012918032	Routine ☐	
Project Location	Rural Eddy County	Rush: same day	
Sampler's Name:	Anna Byers	Due Date:	
PO #:	2RP-1142 + 2RP-2556	Quote #:	

SAMPLE RECEIPT	Temp Blank: Yes (No)	Wet Ice: (Yes) No	
Temperature (°C):	0.5 / 0.5	Thermometer ID	IR
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Total Containers:	

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
	SW11	S	7/26/19	10:10	13.5-18'	1	X	X	X
	SW12	S		10:15	9-13.5'	1	X	X	X
	SW13	S		10:20	4.5-9'	1	X	X	X
	SW14	S		10:25	0.5-4.5'	1	X	X	X
	SW15	S		13:15	13.5-18'	1	X	X	X
	SW16	S		15:20	9-13.5'	1	X	X	X
	SW17	S		15:25	4.5'-9'	1	X	X	X
	SW18	S		15:30	0.5-4.5'	1	X	X	X
	SW19	S		1535	0.5-4.5	1	X	X	X

ANALYSIS REQUEST

Preservative Codes

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

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

Sample Comments

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

Circle Method(s) and Metal(s) to be analyzed

TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U

1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Anna Byers		7/29/19 14:40	2	FedEx	7/29/19 15:30
3				4		7/30/19 1145
5				6		

Revised Date 022619 Rev. 2019.1

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

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 07/30/2019 11:45:00 AM

Work Order #: 632384

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 07/30/2019

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 07/31/2019

Jessica Kramer

Analytical Report 632385

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU 48

012918032

01-AUG-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), North Carolina (681)

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)

01-AUG-19

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

Reference: XENCO Report No(s): **632385**
JRU 48
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) 632385. 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. 632385 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 632385

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH05	S	07-24-19 14:45	2 ft	632385-001
PH05A	S	07-24-19 15:15	18 ft	632385-002
PH06	S	07-25-19 09:05	2 ft	632385-003
PH06A	S	07-25-19 09:30	18 ft	632385-004

Version: 1.%

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 48

Project ID: *012918032*
Work Order Number(s): *632385*

Report Date: *01-AUG-19*
Date Received: *07/30/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3097062 BTEX by EPA 8021B

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

Certificate of Analysis Summary 632385

LT Environmental, Inc., Arvada, CO

Project Name: JRU 48

Project Id: 012918032
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Tue Jul-30-19 11:45 am
Report Date: 01-AUG-19
Project Manager: Jessica Kramer

Analysis Requested															
	Lab Id:	632385-001		632385-002		632385-003		632385-004							
	Field Id:	PH05		PH05A		PH06		PH06A							
	Depth:	2- ft		18- ft		2- ft		18- ft							
	Matrix:	SOIL		SOIL		SOIL		SOIL							
	Sampled:	Jul-24-19 14:45		Jul-24-19 15:15		Jul-25-19 09:05		Jul-25-19 09:30							
BTEX by EPA 8021B	***Extracted:***	** ** ** **		** ** ** **		** ** ** **		** ** ** **							
	Analyzed:	Jul-31-19 10:20		Jul-31-19 11:38		Jul-31-19 11:58		Jul-31-19 12:18							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Benzene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198						
Toluene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198						
Ethylbenzene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198						
m,p-Xylenes		<0.00399	0.00399	<0.00398	0.00398	<0.00398	0.00398	<0.00396	0.00396						
o-Xylene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198						
Total Xylenes		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198						
Total BTEX		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198						
Chloride by EPA 300	***Extracted:***	Jul-30-19 16:30		Jul-30-19 16:30		Jul-30-19 16:30		Jul-30-19 16:30							
	Analyzed:	Jul-30-19 20:45		Jul-30-19 20:51		Jul-30-19 20:57		Jul-30-19 21:04							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Chloride		5.23	4.97	30.3	4.96	<5.04	5.04	1910	25.1						
TPH by SW8015 Mod	***Extracted:***	Jul-31-19 16:00		Jul-31-19 16:00		Jul-31-19 16:00		Jul-31-19 16:00							
	Analyzed:	Jul-31-19 20:21		Jul-31-19 21:30		Jul-31-19 21:53		Jul-31-19 22:16							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0						
Diesel Range Organics (DRO)		<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						
Total TPH		<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						

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

Version: 1.%

Jessica Kramer
Project Assistant

Final 1.000

Certificate of Analytical Results 632385

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH05**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632385-001	Date Collected:	07.24.19 14.45	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 16.30	Basis:	Wet Weight
Seq Number:	3096964				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5.23**	4.97	mg/kg	07.30.19 20.45		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.31.19 16.00	Basis:	Wet Weight
Seq Number:	3097150				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 20.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.31.19 20.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.31.19 20.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.31.19 20.21	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.31.19 20.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	07.31.19 20.21	
o-Terphenyl	84-15-1	101	%	70-135	07.31.19 20.21	

Certificate of Analytical Results 632385

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH05**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632385-001	Date Collected:	07.24.19 14.45	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 11.00	Basis:	Wet Weight
Seq Number:	3097062				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.31.19 10.20	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.31.19 10.20	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.31.19 10.20	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.31.19 10.20	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.31.19 10.20	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.31.19 10.20	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.31.19 10.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	116	%	70-130	07.31.19 10.20	
1,4-Difluorobenzene	540-36-3	88	%	70-130	07.31.19 10.20	

Certificate of Analytical Results 632385

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH05A**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632385-002	Date Collected:	07.24.19 15.15	Sample Depth:	18 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 16.30	Basis:	Wet Weight
Seq Number:	3096964				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**30.3**	4.96	mg/kg	07.30.19 20.51		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.31.19 16.00	Basis:	Wet Weight
Seq Number:	3097150				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 21.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.31.19 21.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.31.19 21.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.31.19 21.30	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.31.19 21.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	07.31.19 21.30	
o-Terphenyl	84-15-1	109	%	70-135	07.31.19 21.30	

Certificate of Analytical Results 632385

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH05A**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632385-002	Date Collected:	07.24.19 15.15	Sample Depth:	18 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 11.00	Basis:	Wet Weight
Seq Number:	3097062				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.31.19 11.38	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.31.19 11.38	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.31.19 11.38	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.31.19 11.38	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.31.19 11.38	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.31.19 11.38	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.31.19 11.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	70-130	07.31.19 11.38	
1,4-Difluorobenzene	540-36-3	107	%	70-130	07.31.19 11.38	

Certificate of Analytical Results 632385

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH06**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632385-003	Date Collected:	07.25.19 09.05	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 16.30	Basis:	Wet Weight
Seq Number:	3096964				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.04	5.04	mg/kg	07.30.19 20.57	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.31.19 16.00	Basis:	Wet Weight
Seq Number:	3097150				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 21.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.31.19 21.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.31.19 21.53	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.31.19 21.53	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.31.19 21.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	07.31.19 21.53	
o-Terphenyl	84-15-1	103	%	70-135	07.31.19 21.53	

Certificate of Analytical Results 632385

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH06**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632385-003	Date Collected:	07.25.19 09.05	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 11.00	Basis:	Wet Weight
Seq Number:	3097062				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.31.19 11.58	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.31.19 11.58	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.31.19 11.58	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.31.19 11.58	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.31.19 11.58	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.31.19 11.58	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.31.19 11.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	108	%	70-130	07.31.19 11.58	
4-Bromofluorobenzene	460-00-4	103	%	70-130	07.31.19 11.58	

Certificate of Analytical Results 632385

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH06A**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632385-004	Date Collected:	07.25.19 09.30	Sample Depth:	18 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 16.30	Basis:	Wet Weight
Seq Number:	3096964				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1910**	25.1	mg/kg	07.30.19 21.04		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.31.19 16.00	Basis:	Wet Weight
Seq Number:	3097150				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 22.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.31.19 22.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.31.19 22.16	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.31.19 22.16	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.31.19 22.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	07.31.19 22.16	
o-Terphenyl	84-15-1	106	%	70-135	07.31.19 22.16	

Certificate of Analytical Results 632385

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**PH06A**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632385-004	Date Collected:	07.25.19 09.30	Sample Depth:	18 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 11.00	Basis:	Wet Weight
Seq Number:	3097062				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.31.19 12.18	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.31.19 12.18	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.31.19 12.18	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	07.31.19 12.18	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.31.19 12.18	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.31.19 12.18	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.31.19 12.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	70-130	07.31.19 12.18	
1,4-Difluorobenzene	540-36-3	107	%	70-130	07.31.19 12.18	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 632385

LT Environmental, Inc.

JRU 48

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096964 — Matrix: Solid — Date Prep: 07.30.19
MB Sample Id: 7683144-1-BLK — LCS Sample Id: 7683144-1-BKS — LCSD Sample Id: 7683144-1-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	264	106	264	106	90-110	0	20	mg/kg	07.30.19 18:13	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096964 — Matrix: Soil — Date Prep: 07.30.19
Parent Sample Id: 632071-001 — MS Sample Id: 632071-001 S — MSD Sample Id: 632071-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.27	252	316	124	318	125	90-110	1	20	mg/kg	07.31.19 09:02	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096964 — Matrix: Soil — Date Prep: 07.30.19
Parent Sample Id: 632384-004 — MS Sample Id: 632384-004 S — MSD Sample Id: 632384-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.67	252	271	105	271	105	90-110	0	20	mg/kg	07.30.19 20:00	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3097150 — Matrix: Solid — Date Prep: 07.31.19
MB Sample Id: 7683060-1-BLK — LCS Sample Id: 7683060-1-BKS — LCSD Sample Id: 7683060-1-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	941	94	848	85	70-135	10	20	mg/kg	07.31.19 19:36	
Diesel Range Organics (DRO)	<8.13	1000	1060	106	1050	105	70-135	1	20	mg/kg	07.31.19 19:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		116		117		70-135	%	07.31.19 19:36
o-Terphenyl	102		115		114		70-135	%	07.31.19 19:36

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

QC Summary 632385

LT Environmental, Inc.

JRU 48

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3097150 | Matrix: Soil | Date Prep: 07.31.19
Parent Sample Id: 632385-001 | MS Sample Id: 632385-001 S | MSD Sample Id: 632385-001 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)	12.1	997	1030	102	1030	102	70-135	0	20	mg/kg	07.31.19 20:44	
Diesel Range Organics (DRO)	12.7	997	1130	112	1150	114	70-135	2	20	mg/kg	07.31.19 20:44	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	78		78		70-135	%	07.31.19 20:44
o-Terphenyl	74		76		70-135	%	07.31.19 20:44

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3097062 | Matrix: Solid | Date Prep: 07.30.19
MB Sample Id: 7683122-1-BLK | LCS Sample Id: 7683122-1-BKS | LCSD Sample Id: 7683122-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0782	78	0.0930	93	70-130	17	35	mg/kg	07.31.19 05:19	
Toluene	<0.000456	0.100	0.0753	75	0.0909	91	70-130	19	35	mg/kg	07.31.19 05:19	
Ethylbenzene	<0.00200	0.100	0.0763	76	0.0927	93	70-130	19	35	mg/kg	07.31.19 05:19	
m,p-Xylenes	<0.00101	0.200	0.155	78	0.189	95	70-130	20	35	mg/kg	07.31.19 05:19	
o-Xylene	<0.000344	0.100	0.0823	82	0.100	100	70-130	19	35	mg/kg	07.31.19 05:19	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		101		101		70-130	%	07.31.19 05:19
4-Bromofluorobenzene	106		109		115		70-130	%	07.31.19 05:19

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3097062 | Matrix: Soil | Date Prep: 07.30.19
Parent Sample Id: 632384-001 | MS Sample Id: 632384-001 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0659	66	70-130	mg/kg	07.31.19 05:59	X
Toluene	<0.00200	0.0998	0.0746	75	70-130	mg/kg	07.31.19 05:59	
Ethylbenzene	<0.00200	0.0998	0.0799	80	70-130	mg/kg	07.31.19 05:59	
m,p-Xylenes	<0.00399	0.200	0.166	83	70-130	mg/kg	07.31.19 05:59	
o-Xylene	<0.00200	0.0998	0.0869	87	70-130	mg/kg	07.31.19 05:59	

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		70-130	%	07.31.19 05:59
4-Bromofluorobenzene	124		70-130	%	07.31.19 05:59

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

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

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

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

Final 1.000

XENCO LABORATORIES

Chain of Custody

Work Order No: 632735

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 _____ of _____

Project Manager:	DAN MOIR	Bill to: (if different)	KYLE LITTRELL
Company Name:	LT ENVIRONMENTAL	Company Name:	XTO
Address:	3300 North A Street	Address:	3104 E. Greene Street
City, State ZIP:	Midland TX 79705	City, State ZIP:	Carlsbad NM 88220
Phone:	432 236 79705	Email:	abyers@ltenv.com & dmoir@ltenv.com

Work Order Comments

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

Project Name:	JRU 48	Turn Around	
Project Number:	012918032	Routine ☐	
P.O. Number:	2RP-1142+2RP-2556	Rush: same day	
Sampler's Name:	Anna Byers	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
~~Temperature (°C):~~	0.5 | 0.3	Thermometer ID:	VE	
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes ~~No~~ N/A	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
PH05	S	7/24/19	1445	2'	1	X	X	X
PH05A	S	7/24/19	1515	18'	1	X	X	X
PH06	S	7/25/19	0905	2'	1	X	X	X
PH06A	S	7/25/19	0930	18'	1	X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Anna Byers		7/24/19 16:53	2	FedEx 1st Del	7/29/19 14:10
3				4		7/30/19 1145
5				6		

Revised Date 051418 Rev. 2018.1

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

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 07/30/2019 11:45:00 AM

Work Order #: 632385

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 07/30/2019

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 07/31/2019

Jessica Kramer

Analytical Report 632387

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU 48

012918032

31-JUL-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), North Carolina (681)

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-JUL-19

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

Reference: XENCO Report No(s): **632387**
JRU 48
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) 632387. 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. 632387 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 632387

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW09	S	07-25-19 11:00	0.5 - 2 ft	632387-001
SW10	S	07-25-19 11:05	0.5 - 2 ft	632387-002
FS06	S	07-25-19 10:45	2 ft	632387-003
FS07	S	07-25-19 10:50	2 ft	632387-004
FS08	S	07-25-19 10:55	2 ft	632387-005
FS09	S	07-25-19 10:57	2 ft	632387-006
FS10	S	07-25-19 12:05	4.5 ft	632387-007
FS11	S	07-25-19 12:10	4.5 ft	632387-008
FS12	S	07-25-19 12:15	4.5 ft	632387-009
FS13	S	07-25-19 12:20	2 - 4.5 ft	632387-010
FS14	S	07-25-19 12:30	2 - 4.5 ft	632387-011

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 48

Project ID: *012918032*
Work Order Number(s): *632387*

Report Date: *31-JUL-19*
Date Received: *07/30/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3097066 BTEX by EPA 8021B

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

Certificate of Analysis Summary 632387

LT Environmental, Inc., Arvada, CO

Project Name: JRU 48

Project Id: 012918032
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Tue Jul-30-19 11:45 am
Report Date: 31-JUL-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	632387-001		632387-002		632387-003		632387-004		632387-005		632387-006	
	Field Id:	SW09		SW10		FS06		FS07		FS08		FS09	
	Depth:	0.5-2 ft		0.5-2 ft		2- ft		2- ft		2- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-25-19 11:00		Jul-25-19 11:05		Jul-25-19 10:45		Jul-25-19 10:50		Jul-25-19 10:55		Jul-25-19 10:57	
BTEX by EPA 8021B	***Extracted:***	Jul-30-19 12:05		Jul-30-19 12:05		Jul-30-19 12:05		Jul-30-19 12:05		Jul-30-19 12:05		Jul-30-19 12:05	
	Analyzed:	Jul-31-19 05:49		Jul-31-19 06:09		Jul-31-19 06:29		Jul-31-19 06:49		Jul-31-19 07:09		Jul-31-19 07:29	
	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	<0.00198	0.00198	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201
Toluene		<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201
Ethylbenzene		<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201
m,p-Xylenes		<0.00400	0.00400	<0.00397	0.00397	<0.00402	0.00402	<0.00401	0.00401	<0.00402	0.00402	<0.00402	0.00402
o-Xylene		<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201
Total Xylenes		<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201
Total BTEX		<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201
Chloride by EPA 300	***Extracted:***	Jul-30-19 17:50		Jul-30-19 17:50		Jul-30-19 17:50		Jul-30-19 17:50		Jul-30-19 17:50		Jul-30-19 17:50	
	Analyzed:	Jul-30-19 22:57		Jul-30-19 23:04		Jul-30-19 23:10		Jul-30-19 23:16		Jul-30-19 23:23		Jul-30-19 23:42	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		288	4.99	114	4.98	87.4	4.97	50.2	4.99	13.9	5.03	25.8	4.96
TPH by SW8015 Mod	***Extracted:***	Jul-30-19 17:00		Jul-30-19 17:00		Jul-30-19 17:00		Jul-30-19 17:00		Jul-30-19 17:00		Jul-30-19 17:00	
	Analyzed:	Jul-31-19 13:51		Jul-31-19 14:14		Jul-31-19 15:00		Jul-31-19 15:23		Jul-31-19 15:46		Jul-31-19 16:09	
	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	<15.0	15.0	<14.9	14.9	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	73.2	14.9	994	15.0	172	15.0	<14.9	14.9	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<14.9	14.9	223	15.0	53.5	15.0	<14.9	14.9	<15.0	15.0
Total TPH		<15.0	15.0	73.2	14.9	1220	15.0	226	15.0	<14.9	14.9	<15.0	15.0
Total GRO-DRO		<15.0	15.0	73.2	14.9	994	15.0	172	15.0	<14.9	14.9	<15.0	15.0

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

Jessica Kramer
Project Assistant

Final 1.000

Certificate of Analysis Summary 632387

LT Environmental, Inc., Arvada, CO

Project Name: JRU 48

Project Id: 012918032
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Tue Jul-30-19 11:45 am
Report Date: 31-JUL-19
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	632387-007		632387-008		632387-009		632387-010		632387-011	
	Field Id:	FS10		FS11		FS12		FS13		FS14	
	Depth:	4.5- ft		4.5- ft		4.5- ft		2-4.5 ft		2-4.5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-25-19 12:05		Jul-25-19 12:10		Jul-25-19 12:15		Jul-25-19 12:20		Jul-25-19 12:30	
BTEX by EPA 8021B	*Extracted:*	Jul-30-19 12:05		Jul-30-19 12:05		Jul-30-19 12:05		Jul-30-19 12:05		Jul-30-19 12:05	
	Analyzed:	Jul-31-19 03:00		Jul-31-19 08:10		Jul-31-19 08:30		Jul-31-19 09:51		Jul-31-19 10:11	
	Units/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	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
m,p-Xylenes		<0.00400	0.00400	<0.00398	0.00398	<0.00402	0.00402	<0.00400	0.00400	<0.00401	0.00401
o-Xylene		<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Chloride by EPA 300	*Extracted:*	Jul-30-19 17:50		Jul-30-19 17:50		Jul-30-19 17:50		Jul-30-19 17:50		Jul-30-19 17:50	
	Analyzed:	Jul-30-19 23:48		Jul-31-19 00:07		Jul-31-19 00:13		Jul-31-19 00:20		Jul-31-19 08:33	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		280	5.04	25.0	4.99	77.2	4.95	6.70	4.98	1470	24.9
TPH by SW8015 Mod	*Extracted:*	Jul-30-19 17:00		Jul-30-19 17:00		Jul-30-19 17:00		Jul-30-19 17:00		Jul-30-19 17:00	
	Analyzed:	Jul-31-19 16:32		Jul-31-19 16:55		Jul-31-19 17:18		Jul-31-19 17:41		Jul-31-19 18:04	
	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	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		398	15.0	96.8	14.9	<15.0	15.0	<15.0	15.0	124	15.0
Motor Oil Range Hydrocarbons (MRO)		67.9	15.0	18.6	14.9	<15.0	15.0	<15.0	15.0	20.8	15.0
Total TPH		466	15.0	115	14.9	<15.0	15.0	<15.0	15.0	145	15.0
Total GRO-DRO		398	15.0	96.8	14.9	<15.0	15.0	<15.0	15.0	124	15.0

Jessica Kramer
Project Assistant

Certificate of Analytical Results 632387

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW09**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-001	Date Collected:	07.25.19 11.00	Sample Depth:	0.5 - 2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 17.50	Basis:	Wet Weight
Seq Number:	3096967				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**288**	4.99	mg/kg	07.30.19 22.57		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 17.00	Basis:	Wet Weight
Seq Number:	3097079				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 13.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.31.19 13.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.31.19 13.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.31.19 13.51	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.31.19 13.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	07.31.19 13.51	
o-Terphenyl	84-15-1	101	%	70-135	07.31.19 13.51	

Certificate of Analytical Results 632387

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW09**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-001	Date Collected:	07.25.19 11.00	Sample Depth:	0.5 - 2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 12.05	Basis:	Wet Weight
Seq Number:	3097066				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.31.19 05.49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.31.19 05.49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.31.19 05.49	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.31.19 05.49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.31.19 05.49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.31.19 05.49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.31.19 05.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	07.31.19 05.49	
1,4-Difluorobenzene	540-36-3	104	%	70-130	07.31.19 05.49	

Certificate of Analytical Results 632387

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW10**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-002	Date Collected:	07.25.19 11.05	Sample Depth:	0.5 - 2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 17.50	Basis:	Wet Weight
Seq Number:	3096967				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**114**	4.98	mg/kg	07.30.19 23.04		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 17.00	Basis:	Wet Weight
Seq Number:	3097079				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.31.19 14.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	**73.2**	14.9	mg/kg	07.31.19 14.14		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	07.31.19 14.14	U	1
Total TPH	PHC635	**73.2**	14.9	mg/kg	07.31.19 14.14		1
Total GRO-DRO	PHC628	**73.2**	14.9	mg/kg	07.31.19 14.14		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	07.31.19 14.14	
o-Terphenyl	84-15-1	96	%	70-135	07.31.19 14.14	

Certificate of Analytical Results 632387

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW10**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-002	Date Collected:	07.25.19 11.05	Sample Depth:	0.5 - 2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 12.05	Basis:	Wet Weight
Seq Number:	3097066				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.31.19 06.09	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.31.19 06.09	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.31.19 06.09	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	07.31.19 06.09	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.31.19 06.09	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.31.19 06.09	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.31.19 06.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	07.31.19 06.09	
1,4-Difluorobenzene	540-36-3	103	%	70-130	07.31.19 06.09	

Certificate of Analytical Results 632387

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS06**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-003	Date Collected:	07.25.19 10.45	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 17.50	Basis:	Wet Weight
Seq Number:	3096967				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**87.4**	4.97	mg/kg	07.30.19 23.10		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 17.00	Basis:	Wet Weight
Seq Number:	3097079				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 15.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	**994**	15.0	mg/kg	07.31.19 15.00		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**223**	15.0	mg/kg	07.31.19 15.00		1
Total TPH	PHC635	**1220**	15.0	mg/kg	07.31.19 15.00		1
Total GRO-DRO	PHC628	**994**	15.0	mg/kg	07.31.19 15.00		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	07.31.19 15.00	
o-Terphenyl	84-15-1	107	%	70-135	07.31.19 15.00	

Certificate of Analytical Results 632387

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS06**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-003	Date Collected:	07.25.19 10.45	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 12.05	Basis:	Wet Weight
Seq Number:	3097066				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.31.19 06.29	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.31.19 06.29	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.31.19 06.29	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.31.19 06.29	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.31.19 06.29	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.31.19 06.29	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.31.19 06.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	126	%	70-130	07.31.19 06.29	
1,4-Difluorobenzene	540-36-3	93	%	70-130	07.31.19 06.29	

Certificate of Analytical Results 632387

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS07**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-004	Date Collected:	07.25.19 10.50	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 17.50	Basis:	Wet Weight
Seq Number:	3096967				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**50.2**	4.99	mg/kg	07.30.19 23.16		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 17.00	Basis:	Wet Weight
Seq Number:	3097079				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 15.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	**172**	15.0	mg/kg	07.31.19 15.23		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**53.5**	15.0	mg/kg	07.31.19 15.23		1
Total TPH	PHC635	**226**	15.0	mg/kg	07.31.19 15.23		1
Total GRO-DRO	PHC628	**172**	15.0	mg/kg	07.31.19 15.23		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	07.31.19 15.23	
o-Terphenyl	84-15-1	98	%	70-135	07.31.19 15.23	

Certificate of Analytical Results 632387

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS07**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-004	Date Collected:	07.25.19 10.50	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 12.05	Basis:	Wet Weight
Seq Number:	3097066				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.31.19 06.49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.31.19 06.49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.31.19 06.49	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.31.19 06.49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.31.19 06.49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.31.19 06.49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.31.19 06.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	07.31.19 06.49	
1,4-Difluorobenzene	540-36-3	96	%	70-130	07.31.19 06.49	

Certificate of Analytical Results 632387

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS08**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-005	Date Collected:	07.25.19 10.55	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 17.50	Basis:	Wet Weight
Seq Number:	3096967				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**13.9**	5.03	mg/kg	07.30.19 23.23		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 17.00	Basis:	Wet Weight
Seq Number:	3097079				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.31.19 15.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	07.31.19 15.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	07.31.19 15.46	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	07.31.19 15.46	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	07.31.19 15.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	07.31.19 15.46	
o-Terphenyl	84-15-1	110	%	70-135	07.31.19 15.46	

Certificate of Analytical Results 632387

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS08**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-005	Date Collected:	07.25.19 10.55	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 12.05	Basis:	Wet Weight
Seq Number:	3097066				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.31.19 07.09	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.31.19 07.09	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.31.19 07.09	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.31.19 07.09	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.31.19 07.09	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.31.19 07.09	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.31.19 07.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	07.31.19 07.09	
4-Bromofluorobenzene	460-00-4	112	%	70-130	07.31.19 07.09	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS09**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-006	Date Collected:	07.25.19 10.57	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 17.50	Basis:	Wet Weight
Seq Number:	3096967				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**25.8**	4.96	mg/kg	07.30.19 23.42		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 17.00	Basis:	Wet Weight
Seq Number:	3097079				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 16.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.31.19 16.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.31.19 16.09	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.31.19 16.09	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.31.19 16.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	07.31.19 16.09	
o-Terphenyl	84-15-1	99	%	70-135	07.31.19 16.09	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS09**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-006	Date Collected:	07.25.19 10.57	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 12.05	Basis:	Wet Weight
Seq Number:	3097066				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.31.19 07.29	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.31.19 07.29	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.31.19 07.29	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.31.19 07.29	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.31.19 07.29	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.31.19 07.29	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.31.19 07.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	07.31.19 07.29	
1,4-Difluorobenzene	540-36-3	104	%	70-130	07.31.19 07.29	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS10**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-007	Date Collected:	07.25.19 12.05	Sample Depth:	4.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 17.50	Basis:	Wet Weight
Seq Number:	3096967				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**280**	5.04	mg/kg	07.30.19 23.48		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 17.00	Basis:	Wet Weight
Seq Number:	3097079				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 16.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	**398**	15.0	mg/kg	07.31.19 16.32		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**67.9**	15.0	mg/kg	07.31.19 16.32		1
Total TPH	PHC635	**466**	15.0	mg/kg	07.31.19 16.32		1
Total GRO-DRO	PHC628	**398**	15.0	mg/kg	07.31.19 16.32		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	07.31.19 16.32	
o-Terphenyl	84-15-1	103	%	70-135	07.31.19 16.32	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS10**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-007	Date Collected:	07.25.19 12.05	Sample Depth:	4.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 12.05	Basis:	Wet Weight
Seq Number:	3097066				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.31.19 03.00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.31.19 03.00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.31.19 03.00	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.31.19 03.00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.31.19 03.00	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.31.19 03.00	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.31.19 03.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	92	%	70-130	07.31.19 03.00	
4-Bromofluorobenzene	460-00-4	100	%	70-130	07.31.19 03.00	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS11**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-008	Date Collected:	07.25.19 12.10	Sample Depth:	4.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 17.50	Basis:	Wet Weight
Seq Number:	3096967				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**25.0**	4.99	mg/kg	07.31.19 00.07		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 17.00	Basis:	Wet Weight
Seq Number:	3097079				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.31.19 16.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	**96.8**	14.9	mg/kg	07.31.19 16.55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**18.6**	14.9	mg/kg	07.31.19 16.55		1
Total TPH	PHC635	**115**	14.9	mg/kg	07.31.19 16.55		1
Total GRO-DRO	PHC628	**96.8**	14.9	mg/kg	07.31.19 16.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	07.31.19 16.55	
o-Terphenyl	84-15-1	110	%	70-135	07.31.19 16.55	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS11**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-008	Date Collected:	07.25.19 12.10	Sample Depth:	4.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 12.05	Basis:	Wet Weight
Seq Number:	3097066				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.31.19 08.10	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.31.19 08.10	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.31.19 08.10	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.31.19 08.10	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.31.19 08.10	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.31.19 08.10	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.31.19 08.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	07.31.19 08.10	
1,4-Difluorobenzene	540-36-3	104	%	70-130	07.31.19 08.10	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS12**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-009	Date Collected:	07.25.19 12.15	Sample Depth:	4.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 17.50	Basis:	Wet Weight
Seq Number:	3096967				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**77.2**	4.95	mg/kg	07.31.19 00.13		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 17.00	Basis:	Wet Weight
Seq Number:	3097079				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 17.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.31.19 17.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.31.19 17.18	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.31.19 17.18	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.31.19 17.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	07.31.19 17.18	
o-Terphenyl	84-15-1	103	%	70-135	07.31.19 17.18	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS12**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-009	Date Collected:	07.25.19 12.15	Sample Depth:	4.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 12.05	Basis:	Wet Weight
Seq Number:	3097066				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.31.19 08.30	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.31.19 08.30	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.31.19 08.30	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.31.19 08.30	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.31.19 08.30	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.31.19 08.30	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.31.19 08.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	07.31.19 08.30	
1,4-Difluorobenzene	540-36-3	103	%	70-130	07.31.19 08.30	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS13**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-010	Date Collected:	07.25.19 12.20	Sample Depth:	2 - 4.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 17.50	Basis:	Wet Weight
Seq Number:	3096967				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6.70**	4.98	mg/kg	07.31.19 00.20		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 17.00	Basis:	Wet Weight
Seq Number:	3097079				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 17.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.31.19 17.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.31.19 17.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.31.19 17.41	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.31.19 17.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	07.31.19 17.41	
o-Terphenyl	84-15-1	101	%	70-135	07.31.19 17.41	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS13**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-010	Date Collected:	07.25.19 12.20	Sample Depth:	2 - 4.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 12.05	Basis:	Wet Weight
Seq Number:	3097066				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.31.19 09.51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.31.19 09.51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.31.19 09.51	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.31.19 09.51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.31.19 09.51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.31.19 09.51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.31.19 09.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	07.31.19 09.51	
1,4-Difluorobenzene	540-36-3	102	%	70-130	07.31.19 09.51	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS14**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-011	Date Collected:	07.25.19 12.30	Sample Depth:	2 - 4.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.30.19 17.50	Basis:	Wet Weight
Seq Number:	3096967				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1470**	24.9	mg/kg	07.31.19 08.33		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.19 17.00	Basis:	Wet Weight
Seq Number:	3097079				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.31.19 18.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	**124**	15.0	mg/kg	07.31.19 18.04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**20.8**	15.0	mg/kg	07.31.19 18.04		1
Total TPH	PHC635	**145**	15.0	mg/kg	07.31.19 18.04		1
Total GRO-DRO	PHC628	**124**	15.0	mg/kg	07.31.19 18.04		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	07.31.19 18.04	
o-Terphenyl	84-15-1	108	%	70-135	07.31.19 18.04	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS14**	Matrix:	Soil	Date Received:	07.30.19 11.45
Lab Sample Id:	632387-011	Date Collected:	07.25.19 12.30	Sample Depth:	2 - 4.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	AMB	Date Prep:	07.30.19 12.05	Basis:	Wet Weight
Seq Number:	3097066				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.31.19 10.11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.31.19 10.11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.31.19 10.11	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.31.19 10.11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.31.19 10.11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.31.19 10.11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.31.19 10.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	70-130	07.31.19 10.11	
1,4-Difluorobenzene	540-36-3	106	%	70-130	07.31.19 10.11	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 632387

LT Environmental, Inc.

JRU 48

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096967 — Matrix: Solid — Date Prep: 07.30.19
MB Sample Id: 7683147-1-BLK — LCS Sample Id: 7683147-1-BKS — LCSD Sample Id: 7683147-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	268	107	267	107	90-110	0	20	mg/kg	07.30.19 21:42	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096967 — Matrix: Soil — Date Prep: 07.30.19
Parent Sample Id: 632386-005 — MS Sample Id: 632386-005 S — MSD Sample Id: 632386-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	113	252	389	110	388	109	90-110	0	20	mg/kg	07.30.19 22:00	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3096967 — Matrix: Soil — Date Prep: 07.30.19
Parent Sample Id: 632387-005 — MS Sample Id: 632387-005 S — MSD Sample Id: 632387-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	13.9	252	286	108	286	108	90-110	0	20	mg/kg	07.30.19 23:29	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3097079 — Matrix: Solid — Date Prep: 07.30.19
MB Sample Id: 7683223-1-BLK — LCS Sample Id: 7683223-1-BKS — LCSD Sample Id: 7683223-1-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)	12.7	1000	837	84	849	85	70-135	1	20	mg/kg	07.31.19 09:14	
Diesel Range Organics (DRO)	11.3	1000	1150	115	1090	109	70-135	5	20	mg/kg	07.31.19 09:14	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		115		111		70-135	%	07.31.19 09:14
o-Terphenyl	92		112		104		70-135	%	07.31.19 09:14

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

QC Summary 632387

LT Environmental, Inc.

JRU 48

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3097079 | Matrix: Soil | Date Prep: 07.30.19
Parent Sample Id: 632386-008 | MS Sample Id: 632386-008 S | MSD Sample Id: 632386-008 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	997	811	80	825	81	70-135	2	20	mg/kg	07.31.19 13:05	
Diesel Range Organics (DRO)	<8.10	997	1010	101	970	97	70-135	4	20	mg/kg	07.31.19 13:05	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		111		70-135	%	07.31.19 13:05
o-Terphenyl	110		103		70-135	%	07.31.19 13:05

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3097066 | Matrix: Solid | Date Prep: 07.30.19
MB Sample Id: 7683123-1-BLK | LCS Sample Id: 7683123-1-BKS | LCSD Sample Id: 7683123-1-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	0.0926	93	0.102	102	70-130	10	35	mg/kg	07.31.19 03:29	
Toluene	<0.00200	0.100	0.0900	90	0.100	100	70-130	11	35	mg/kg	07.31.19 03:29	
Ethylbenzene	<0.00200	0.100	0.102	102	0.113	113	70-130	10	35	mg/kg	07.31.19 03:29	
m,p-Xylenes	<0.00400	0.200	0.205	103	0.228	114	70-130	11	35	mg/kg	07.31.19 03:29	
o-Xylene	<0.00200	0.100	0.102	102	0.112	112	70-130	9	35	mg/kg	07.31.19 03:29	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		100		100		70-130	%	07.31.19 03:29
4-Bromofluorobenzene	100		107		115		70-130	%	07.31.19 03:29

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3097066 | Matrix: Soil | Date Prep: 07.30.19
Parent Sample Id: 632386-008 | MS Sample Id: 632386-008 S | MSD Sample Id: 632386-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0990	0.0742	75	0.0978	98	70-130	27	35	mg/kg	07.31.19 04:09	
Toluene	<0.00198	0.0990	0.0719	73	0.0944	95	70-130	27	35	mg/kg	07.31.19 04:09	
Ethylbenzene	<0.00198	0.0990	0.0815	82	0.107	107	70-130	27	35	mg/kg	07.31.19 04:09	
m,p-Xylenes	<0.00396	0.198	0.163	82	0.216	109	70-130	28	35	mg/kg	07.31.19 04:09	
o-Xylene	<0.00198	0.0990	0.0818	83	0.106	106	70-130	26	35	mg/kg	07.31.19 04:09	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		105		70-130	%	07.31.19 04:09
4-Bromofluorobenzene	121		121		70-130	%	07.31.19 04:09

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

Chain of Custody

Work Order No: 632387

XENCO LABORATORIES
Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)
www.xenco.com Page 1 of 2

Project Manager:	DAN MOIR	Bill to: (if different)	KYLE LITTRELL
Company Name:	LT ENVIRONMENTAL	Company Name:	XTO
Address:	3300 NORTH A STREET	Address:	3104 E. GREENE STREET
City, State ZIP:	MIDLAND TX 79705	City, State ZIP:	CARLSBAD NM 88220
Phone:	432 236 3849 Email:		abyers@ltenv.com & dmoir@ltenv.com

Work Order Comments

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

Project Name:	JRU 48	Turn Around	
Project Number:	012918032	Routine ☐	
P.O. Number:	2RP-1142 & 2RP-2556	Rush: same day	
Sampler's Name:	Anna Byers	Due Date:	

SAMPLE RECEIPT				
Temperature (°C):	0.5/0.3	Temp Blank: Yes (No)	Wet Ice: (Yes) No	
Received Intact:	(Yes) No	Thermometer ID:	VE	
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes (No) N/A	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
SW09	S	7/25/19	1100	0.5-2'	1			
SW10	S	7/25/19	1105	0.5-2'	1			
FS06	S	7/25/19	1045	2'	1			
FS07	S	7/25/19	1050	2'	1			
FS08	S	7/25/19	1055	2'	1			
FS09	S	7/25/19	1057	2'	1			
FS10	S	7/24/19	1205	4.5'	1			
FS11	S	7/24/19	1210	4.5'	1			
FS12	S	7/24/19	1215	4.5'	1			
FS13	S	7/24/19	1220	2-4.5'	1			

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Anna Byers		7/24/19 10:55	2	FedEx Ground	7/29/19 14:00
3				4		7/30/19 1145
5				6		

Revised Date 051418 Rev. 2018.1

Chain of Custody

XENCO LABORATORIES

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

Work Order No: 637387

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Project Manager:	[redacted] DAN MOIR	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	3104 E. Greene Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad NM 88220
Phone:	[redacted] 432 236 3849	Email:	abyers@ltenv.com & dmoir@ltenv.com

Work Order Comments

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

Project Name:	JRU 48	Turn Around	
Project Number:	012918032	Routine ☐	
P.O. Number:	2RP-1142 & 2RP-2556	Rush: same day	
Sampler's Name:	Anna Byers	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.5 0.3	Thermometer ID	8 DE
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.7
Sample Custody Seals:	Yes (No) N/A	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
FS14	S	7/24/19	1230	2-4.5'	1	X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

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

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		7/24/19 14:53	2	FedEx Priority	7/29/19 14:00
			4		7/30/19 11:45
			6		

Revised Date 051418 Rev. 2018.1

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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Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 07/30/2019 11:45:00 AM

Work Order #: 632387

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 07/30/2019
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 07/31/2019
Jessica Kramer

Analytical Report 632692

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU 48

012918032

02-AUG-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), North Carolina (681)

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)

02-AUG-19

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

Reference: XENCO Report No(s): **632692**
JRU 48
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) 632692. 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. 632692 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 632692

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW20	S	07-30-19 10:50	4.5 - 9 ft	632692-001
SW21	S	07-30-19 11:00	9 - 13.5 ft	632692-002
SW22	S	07-30-19 11:15	13.5 - 18 ft	632692-003
SW23	S	07-30-19 12:00	13.5 - 18 ft	632692-004
SW24	S	07-30-19 12:25	9 - 13.5 ft	632692-005
SW26	S	07-30-19 14:15	13.5 - 9 ft	632692-006
SW25	S	07-30-19 12:30	4.5 - 9 ft	632692-007
SW27	S	07-30-19 14:30	9 - 13.5 ft	632692-008
SW28	S	07-30-19 14:45	4.5 - 9 ft	632692-009
FS15	S	07-30-19 13:30	18 ft	632692-010
SW29	S	07-30-19 15:30	13.5 - 18 ft	632692-011
SW30	S	07-30-19 16:00	9 - 13.5 ft	632692-012
SW31	S	07-30-19 17:00	4.5 - 9 ft	632692-013
SW32	S	07-30-19 17:15	0.5 - 4.5 ft	632692-014
FS16	S	07-30-19 15:00	18 ft	632692-015

Version: 1.%

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 48

Project ID: *012918032*
Work Order Number(s): *632692*

Report Date: *02-AUG-19*
Date Received: *08/01/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3097359 BTEX by EPA 8021B

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

Certificate of Analysis Summary 632692

LT Environmental, Inc., Arvada, CO

Project Name: JRU 48

Project Id: 012918032
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Thu Aug-01-19 12:10 pm
Report Date: 02-AUG-19
Project Manager: Jessica Kramer

Analysis Requested		632692-001		632692-002		632692-003		632692-004		632692-005		632692-006	
	Field Id:	SW20		SW21		SW22		SW23		SW24		SW26	
	Depth:	4.5-9 ft		9-13.5 ft		13.5-18 ft		13.5-18 ft		9-13.5 ft		13.5-9 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-30-19 10:50		Jul-30-19 11:00		Jul-30-19 11:15		Jul-30-19 12:00		Jul-30-19 12:25		Jul-30-19 14:15	
BTEX by EPA 8021B	*Extracted:*	** ** ** **		** ** ** **		** ** ** **		** ** ** **		** ** ** **		** ** ** **	
	Analyzed:	Aug-01-19 22:44		Aug-01-19 23:04		Aug-01-19 23:24		Aug-01-19 23:45		Aug-02-19 00:05		Aug-02-19 00:25	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200
m,p-Xylenes		<0.00400	0.00400	<0.00399	0.00399	<0.00400	0.00400	<0.00398	0.00398	<0.00397	0.00397	<0.00399	0.00399
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200
Chloride by EPA 300	*Extracted:*	Aug-01-19 17:00		Aug-01-19 17:00		Aug-01-19 17:00		Aug-01-19 17:00		Aug-01-19 17:00		Aug-01-19 17:00	
	Analyzed:	Aug-01-19 23:22		Aug-01-19 23:28		Aug-01-19 23:47		Aug-01-19 23:53		Aug-02-19 00:00		Aug-02-19 00:06	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1210	5.02	1700	25.3	9220	49.8	8020	50.4	5440	24.8	6990	49.8
TPH by SW8015 Mod	*Extracted:*	Aug-01-19 15:00		Aug-01-19 15:00		Aug-01-19 15:00		Aug-01-19 15:00		Aug-01-19 15:00		Aug-01-19 15:00	
	Analyzed:	Aug-01-19 22:13		Aug-01-19 23:22		Aug-01-19 23:45		Aug-02-19 00:08		Aug-02-19 00:31		Aug-02-19 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	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	29.2	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	29.2	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	29.2	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

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Version: 1.%

Jessica Kramer
Project Assistant

Final 1.000

Certificate of Analysis Summary 632692

LT Environmental, Inc., Arvada, CO

Project Name: JRU 48

Project Id: 012918032
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Thu Aug-01-19 12:10 pm
Report Date: 02-AUG-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	632692-007		632692-008		632692-009		632692-010		632692-011		632692-012	
	Field Id:	SW25		SW27		SW28		FS15		SW29		SW30	
	Depth:	4.5-9 ft		9-13.5 ft		4.5-9 ft		18- ft		13.5-18 ft		9-13.5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-30-19 12:30		Jul-30-19 14:30		Jul-30-19 14:45		Jul-30-19 13:30		Jul-30-19 15:30		Jul-30-19 16:00	
BTEX by EPA 8021B	*Extracted:*	** ** ** **		** ** ** **		** ** ** **		** ** ** **		** ** ** **		** ** ** **	
	Analyzed:	Aug-02-19 01:43		Aug-02-19 02:03		Aug-02-19 02:24		Aug-02-19 02:44		Aug-02-19 03:04		Aug-02-19 03:24	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
m,p-Xylenes		<0.00400	0.00400	<0.00399	0.00399	<0.00401	0.00401	<0.00398	0.00398	<0.00398	0.00398	<0.00401	0.00401
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Chloride by EPA 300	*Extracted:*	Aug-01-19 17:00		Aug-01-19 17:00		Aug-01-19 17:00		Aug-01-19 17:30		Aug-01-19 17:30		Aug-01-19 17:30	
	Analyzed:	Aug-02-19 00:12		Aug-02-19 00:19		Aug-02-19 00:25		Aug-01-19 19:22		Aug-01-19 19:28		Aug-01-19 19:33	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		5370	24.9	3700	24.9	1650	24.9	11200	50.3	4270	25.2	4780	25.1
TPH by SW8015 Mod	*Extracted:*	Aug-01-19 15:00		Aug-01-19 15:00		Aug-01-19 15:00		Aug-01-19 15:00		Aug-01-19 15:00		Aug-01-19 15:00	
	Analyzed:	Aug-02-19 01:16		Aug-02-19 01:39		Aug-02-19 02:02		Aug-02-19 02:25		Aug-02-19 03:10		Aug-02-19 03:33	
	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	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		17.2	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	20.8	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		17.2	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	20.8	15.0
Total GRO-DRO		17.2	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	20.8	15.0

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Jessica Kramer
Project Assistant

Certificate of Analysis Summary 632692

LT Environmental, Inc., Arvada, CO

Project Name: JRU 48

Project Id: 012918032
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Thu Aug-01-19 12:10 pm
Report Date: 02-AUG-19
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	632692-013		632692-014		632692-015					
	Field Id:	SW31		SW32		FS16					
	Depth:	4.5-9 ft		0.5-4.5 ft		18- ft					
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	Jul-30-19 17:00		Jul-30-19 17:15		Jul-30-19 15:00					
BTEX by EPA 8021B	***Extracted:***	** ** ** **		** ** ** **		** ** ** **					
	Analyzed:	Aug-02-19 03:44		Aug-02-19 04:04		Aug-02-19 04:25					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199				
Toluene		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199				
Ethylbenzene		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199				
m,p-Xylenes		<0.00398	0.00398	<0.00399	0.00399	<0.00398	0.00398				
o-Xylene		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199				
Total Xylenes		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199				
Total BTEX		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199				
Chloride by EPA 300	***Extracted:***	Aug-01-19 17:30		Aug-01-19 17:30		Aug-01-19 17:30					
	Analyzed:	Aug-01-19 19:38		Aug-01-19 19:06		Aug-01-19 19:55					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		488	4.99	8.39	4.99	11300	50.2				
TPH by SW8015 Mod	***Extracted:***	Aug-01-19 15:00		Aug-01-19 15:00		Aug-01-19 15:00					
	Analyzed:	Aug-02-19 03:56		Aug-02-19 04:18		Aug-02-19 04:41					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		64.5	15.0	16.5	15.0	21.6	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0				
Total TPH		64.5	15.0	16.5	15.0	21.6	15.0				
Total GRO-DRO		64.5	15.0	16.5	15.0	21.6	15.0				

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Certificate of Analytical Results 632692

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW20**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-001	Date Collected:	07.30.19 10.50	Sample Depth:	4.5 - 9 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.01.19 17.00	Basis:	Wet Weight
Seq Number:	3097307				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1210**	5.02	mg/kg	08.01.19 23.22		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.01.19 15.00	Basis:	Wet Weight
Seq Number:	3097289				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.01.19 22.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.01.19 22.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.01.19 22.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.01.19 22.13	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.01.19 22.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	08.01.19 22.13	
o-Terphenyl	84-15-1	93	%	70-135	08.01.19 22.13	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW20**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-001	Date Collected:	07.30.19 10.50	Sample Depth:	4.5 - 9 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	ALG	Date Prep:	08.01.19 11.15	Basis:	Wet Weight
Seq Number:	3097359				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.01.19 22.44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.01.19 22.44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.01.19 22.44	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.01.19 22.44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.01.19 22.44	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.01.19 22.44	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.01.19 22.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.01.19 22.44	
4-Bromofluorobenzene	460-00-4	120	%	70-130	08.01.19 22.44	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW21**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-002	Date Collected:	07.30.19 11.00	Sample Depth:	9 - 13.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.01.19 17.00	Basis:	Wet Weight
Seq Number:	3097307				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1700**	25.3	mg/kg	08.01.19 23.28		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.01.19 15.00	Basis:	Wet Weight
Seq Number:	3097289				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.01.19 23.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.01.19 23.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.01.19 23.22	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.01.19 23.22	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.01.19 23.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	08.01.19 23.22	
o-Terphenyl	84-15-1	82	%	70-135	08.01.19 23.22	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW21**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-002	Date Collected:	07.30.19 11.00	Sample Depth:	9 - 13.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	ALG	Date Prep:	08.01.19 11.15	Basis:	Wet Weight
Seq Number:	3097359				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.01.19 23.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.01.19 23.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.01.19 23.04	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.01.19 23.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.01.19 23.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.01.19 23.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.01.19 23.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.01.19 23.04	
4-Bromofluorobenzene	460-00-4	110	%	70-130	08.01.19 23.04	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW22**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-003	Date Collected:	07.30.19 11.15	Sample Depth:	13.5 - 18 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.01.19 17.00	Basis:	Wet Weight
Seq Number:	3097307				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**9220**	49.8	mg/kg	08.01.19 23.47		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.01.19 15.00	Basis:	Wet Weight
Seq Number:	3097289				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.01.19 23.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	**29.2**	15.0	mg/kg	08.01.19 23.45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.01.19 23.45	U	1
Total TPH	PHC635	**29.2**	15.0	mg/kg	08.01.19 23.45		1
Total GRO-DRO	PHC628	**29.2**	15.0	mg/kg	08.01.19 23.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	08.01.19 23.45	
o-Terphenyl	84-15-1	81	%	70-135	08.01.19 23.45	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW22**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-003	Date Collected:	07.30.19 11.15	Sample Depth:	13.5 - 18 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	ALG	Date Prep:	08.01.19 11.15	Basis:	Wet Weight
Seq Number:	3097359				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.01.19 23.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.01.19 23.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.01.19 23.24	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.01.19 23.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.01.19 23.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.01.19 23.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.01.19 23.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	08.01.19 23.24	
1,4-Difluorobenzene	540-36-3	108	%	70-130	08.01.19 23.24	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW23**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-004	Date Collected:	07.30.19 12.00	Sample Depth:	13.5 - 18 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.01.19 17.00	Basis:	Wet Weight
Seq Number:	3097307				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8020**	50.4	mg/kg	08.01.19 23.53		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.01.19 15.00	Basis:	Wet Weight
Seq Number:	3097289				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.02.19 00.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.02.19 00.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.02.19 00.08	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.02.19 00.08	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.02.19 00.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	08.02.19 00.08	
o-Terphenyl	84-15-1	99	%	70-135	08.02.19 00.08	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW23**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-004	Date Collected:	07.30.19 12.00	Sample Depth:	13.5 - 18 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	ALG	Date Prep:	08.01.19 11.15	Basis:	Wet Weight
Seq Number:	3097359				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.01.19 23.45	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.01.19 23.45	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.01.19 23.45	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.01.19 23.45	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.01.19 23.45	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.01.19 23.45	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.01.19 23.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.01.19 23.45	
4-Bromofluorobenzene	460-00-4	116	%	70-130	08.01.19 23.45	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW24**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-005	Date Collected:	07.30.19 12.25	Sample Depth:	9 - 13.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.01.19 17.00	Basis:	Wet Weight
Seq Number:	3097307				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5440**	24.8	mg/kg	08.02.19 00.00		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.01.19 15.00	Basis:	Wet Weight
Seq Number:	3097289				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.02.19 00.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.02.19 00.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.02.19 00.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.02.19 00.31	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.02.19 00.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	08.02.19 00.31	
o-Terphenyl	84-15-1	84	%	70-135	08.02.19 00.31	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW24**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-005	Date Collected:	07.30.19 12.25	Sample Depth:	9 - 13.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	ALG	Date Prep:	08.01.19 11.15	Basis:	Wet Weight
Seq Number:	3097359				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.02.19 00.05	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.02.19 00.05	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.02.19 00.05	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.02.19 00.05	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.02.19 00.05	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.02.19 00.05	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.02.19 00.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	08.02.19 00.05	
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.02.19 00.05	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW26**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-006	Date Collected:	07.30.19 14.15	Sample Depth:	13.5 - 9 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.01.19 17.00	Basis:	Wet Weight
Seq Number:	3097307				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6990**	49.8	mg/kg	08.02.19 00.06		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.01.19 15.00	Basis:	Wet Weight
Seq Number:	3097289				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.02.19 00.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.02.19 00.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.02.19 00.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.02.19 00.54	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.02.19 00.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	08.02.19 00.54	
o-Terphenyl	84-15-1	86	%	70-135	08.02.19 00.54	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW26**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-006	Date Collected:	07.30.19 14.15	Sample Depth:	13.5 - 9 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	ALG	Date Prep:	08.01.19 11.15	Basis:	Wet Weight
Seq Number:	3097359				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.02.19 00.25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.02.19 00.25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.02.19 00.25	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.02.19 00.25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.02.19 00.25	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.02.19 00.25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.02.19 00.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	08.02.19 00.25	
4-Bromofluorobenzene	460-00-4	123	%	70-130	08.02.19 00.25	

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JRU 48

Sample Id:	**SW25**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-007	Date Collected:	07.30.19 12.30	Sample Depth:	4.5 - 9 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.01.19 17.00	Basis:	Wet Weight
Seq Number:	3097307				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5370**	24.9	mg/kg	08.02.19 00.12		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.01.19 15.00	Basis:	Wet Weight
Seq Number:	3097289				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.02.19 01.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	**17.2**	15.0	mg/kg	08.02.19 01.16		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.02.19 01.16	U	1
Total TPH	PHC635	**17.2**	15.0	mg/kg	08.02.19 01.16		1
Total GRO-DRO	PHC628	**17.2**	15.0	mg/kg	08.02.19 01.16		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	08.02.19 01.16	
o-Terphenyl	84-15-1	77	%	70-135	08.02.19 01.16	

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JRU 48

Sample Id:	**SW25**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-007	Date Collected:	07.30.19 12.30	Sample Depth:	4.5 - 9 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	ALG	Date Prep:	08.01.19 11.15	Basis:	Wet Weight
Seq Number:	3097359				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.02.19 01.43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.02.19 01.43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.02.19 01.43	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.02.19 01.43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.02.19 01.43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.02.19 01.43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.02.19 01.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.02.19 01.43	
4-Bromofluorobenzene	460-00-4	108	%	70-130	08.02.19 01.43	

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JRU 48

Sample Id:	**SW27**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-008	Date Collected:	07.30.19 14.30	Sample Depth:	9 - 13.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.01.19 17.00	Basis:	Wet Weight
Seq Number:	3097307				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3700**	24.9	mg/kg	08.02.19 00.19		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.01.19 15.00	Basis:	Wet Weight
Seq Number:	3097289				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.02.19 01.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.02.19 01.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.02.19 01.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.02.19 01.39	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.02.19 01.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	08.02.19 01.39	
o-Terphenyl	84-15-1	80	%	70-135	08.02.19 01.39	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW27**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-008	Date Collected:	07.30.19 14.30	Sample Depth:	9 - 13.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	ALG	Date Prep:	08.01.19 11.15	Basis:	Wet Weight
Seq Number:	3097359				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.02.19 02.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.02.19 02.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.02.19 02.03	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.02.19 02.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.02.19 02.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.02.19 02.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.02.19 02.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	08.02.19 02.03	
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.02.19 02.03	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW28**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-009	Date Collected:	07.30.19 14.45	Sample Depth:	4.5 - 9 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.01.19 17.00	Basis:	Wet Weight
Seq Number:	3097307				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1650**	24.9	mg/kg	08.02.19 00.25		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.01.19 15.00	Basis:	Wet Weight
Seq Number:	3097289				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.02.19 02.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.02.19 02.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.02.19 02.02	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.02.19 02.02	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.02.19 02.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	08.02.19 02.02	
o-Terphenyl	84-15-1	82	%	70-135	08.02.19 02.02	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW28**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-009	Date Collected:	07.30.19 14.45	Sample Depth:	4.5 - 9 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	ALG	Date Prep:	08.01.19 11.15	Basis:	Wet Weight
Seq Number:	3097359				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.02.19 02.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.02.19 02.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.02.19 02.24	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.02.19 02.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.02.19 02.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.02.19 02.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.02.19 02.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.02.19 02.24	
4-Bromofluorobenzene	460-00-4	109	%	70-130	08.02.19 02.24	

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JRU 48

Sample Id:	**FS15**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-010	Date Collected:	07.30.19 13.30	Sample Depth:	18 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.01.19 17.30	Basis:	Wet Weight
Seq Number:	3097309				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11200**	50.3	mg/kg	08.01.19 19.22		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.01.19 15.00	Basis:	Wet Weight
Seq Number:	3097289				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.02.19 02.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.02.19 02.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.02.19 02.25	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.02.19 02.25	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.02.19 02.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	08.02.19 02.25	
o-Terphenyl	84-15-1	90	%	70-135	08.02.19 02.25	

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JRU 48

Sample Id:	**FS15**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-010	Date Collected:	07.30.19 13.30	Sample Depth:	18 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	ALG	Date Prep:	08.01.19 11.15	Basis:	Wet Weight
Seq Number:	3097359				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.02.19 02.44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.02.19 02.44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.02.19 02.44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.02.19 02.44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.02.19 02.44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.02.19 02.44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.02.19 02.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	08.02.19 02.44	
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.02.19 02.44	

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JRU 48

Sample Id:	**SW29**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-011	Date Collected:	07.30.19 15.30	Sample Depth:	13.5 - 18 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.01.19 17.30	Basis:	Wet Weight
Seq Number:	3097309				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4270**	25.2	mg/kg	08.01.19 19.28		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.01.19 15.00	Basis:	Wet Weight
Seq Number:	3097289				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.02.19 03.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.02.19 03.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.02.19 03.10	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.02.19 03.10	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.02.19 03.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	08.02.19 03.10	
o-Terphenyl	84-15-1	90	%	70-135	08.02.19 03.10	

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LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW29**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-011	Date Collected:	07.30.19 15.30	Sample Depth:	13.5 - 18 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	ALG	Date Prep:	08.01.19 11.15	Basis:	Wet Weight
Seq Number:	3097359				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.02.19 03.04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.02.19 03.04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.02.19 03.04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.02.19 03.04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.02.19 03.04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.02.19 03.04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.02.19 03.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	08.02.19 03.04	
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.02.19 03.04	

Certificate of Analytical Results 632692

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW30**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-012	Date Collected:	07.30.19 16.00	Sample Depth:	9 - 13.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.01.19 17.30	Basis:	Wet Weight
Seq Number:	3097309				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4780**	25.1	mg/kg	08.01.19 19.33		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.01.19 15.00	Basis:	Wet Weight
Seq Number:	3097289				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.02.19 03.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	**20.8**	15.0	mg/kg	08.02.19 03.33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.02.19 03.33	U	1
Total TPH	PHC635	**20.8**	15.0	mg/kg	08.02.19 03.33		1
Total GRO-DRO	PHC628	**20.8**	15.0	mg/kg	08.02.19 03.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	08.02.19 03.33	
o-Terphenyl	84-15-1	85	%	70-135	08.02.19 03.33	

Certificate of Analytical Results 632692

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW30**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-012	Date Collected:	07.30.19 16.00	Sample Depth:	9 - 13.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	ALG	Date Prep:	08.01.19 11.15	Basis:	Wet Weight
Seq Number:	3097359				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.02.19 03.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.02.19 03.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.02.19 03.24	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.02.19 03.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.02.19 03.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.02.19 03.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.02.19 03.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119	%	70-130	08.02.19 03.24	
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.02.19 03.24	

Certificate of Analytical Results 632692

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW31**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-013	Date Collected:	07.30.19 17.00	Sample Depth:	4.5 - 9 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.01.19 17.30	Basis:	Wet Weight
Seq Number:	3097309				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**488**	4.99	mg/kg	08.01.19 19.38		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.01.19 15.00	Basis:	Wet Weight
Seq Number:	3097289				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.02.19 03.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	**64.5**	15.0	mg/kg	08.02.19 03.56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.02.19 03.56	U	1
Total TPH	PHC635	**64.5**	15.0	mg/kg	08.02.19 03.56		1
Total GRO-DRO	PHC628	**64.5**	15.0	mg/kg	08.02.19 03.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	08.02.19 03.56	
o-Terphenyl	84-15-1	83	%	70-135	08.02.19 03.56	

Certificate of Analytical Results 632692

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW31**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-013	Date Collected:	07.30.19 17.00	Sample Depth:	4.5 - 9 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	ALG	Date Prep:	08.01.19 11.15	Basis:	Wet Weight
Seq Number:	3097359				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.02.19 03.44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.02.19 03.44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.02.19 03.44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.02.19 03.44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.02.19 03.44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.02.19 03.44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.02.19 03.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.02.19 03.44	
4-Bromofluorobenzene	460-00-4	118	%	70-130	08.02.19 03.44	

Certificate of Analytical Results 632692

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW32**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-014	Date Collected:	07.30.19 17.15	Sample Depth:	0.5 - 4.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.01.19 17.30	Basis:	Wet Weight
Seq Number:	3097309				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8.39**	4.99	mg/kg	08.01.19 19.06		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.01.19 15.00	Basis:	Wet Weight
Seq Number:	3097289				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.02.19 04.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	**16.5**	15.0	mg/kg	08.02.19 04.18		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.02.19 04.18	U	1
Total TPH	PHC635	**16.5**	15.0	mg/kg	08.02.19 04.18		1
Total GRO-DRO	PHC628	**16.5**	15.0	mg/kg	08.02.19 04.18		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	08.02.19 04.18	
o-Terphenyl	84-15-1	70	%	70-135	08.02.19 04.18	

Certificate of Analytical Results 632692

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**SW32**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-014	Date Collected:	07.30.19 17.15	Sample Depth:	0.5 - 4.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	ALG	Date Prep:	08.01.19 11.15	Basis:	Wet Weight
Seq Number:	3097359				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.02.19 04.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.02.19 04.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.02.19 04.04	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.02.19 04.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.02.19 04.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.02.19 04.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.02.19 04.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.02.19 04.04	
4-Bromofluorobenzene	460-00-4	123	%	70-130	08.02.19 04.04	

Certificate of Analytical Results 632692

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS16**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-015	Date Collected:	07.30.19 15.00	Sample Depth:	18 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	08.01.19 17.30	Basis:	Wet Weight
Seq Number:	3097309				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11300**	50.2	mg/kg	08.01.19 19.55		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.01.19 15.00	Basis:	Wet Weight
Seq Number:	3097289				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.02.19 04.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	**21.6**	15.0	mg/kg	08.02.19 04.41		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.02.19 04.41	U	1
Total TPH	PHC635	**21.6**	15.0	mg/kg	08.02.19 04.41		1
Total GRO-DRO	PHC628	**21.6**	15.0	mg/kg	08.02.19 04.41		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	08.02.19 04.41	
o-Terphenyl	84-15-1	90	%	70-135	08.02.19 04.41	

Certificate of Analytical Results 632692

LT Environmental, Inc., Arvada, CO

JRU 48

Sample Id:	**FS16**	Matrix:	Soil	Date Received:	08.01.19 12.10
Lab Sample Id:	632692-015	Date Collected:	07.30.19 15.00	Sample Depth:	18 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	ALG	Date Prep:	08.01.19 11.15	Basis:	Wet Weight
Seq Number:	3097359				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.02.19 04.25	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.02.19 04.25	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.02.19 04.25	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.02.19 04.25	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.02.19 04.25	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.02.19 04.25	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.02.19 04.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.02.19 04.25	
4-Bromofluorobenzene	460-00-4	109	%	70-130	08.02.19 04.25	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 632692

LT Environmental, Inc.

JRU 48

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3097307 — Matrix: Solid — Date Prep: 08.01.19
MB Sample Id: 7683354-1-BLK — LCS Sample Id: 7683354-1-BKS — LCSD Sample Id: 7683354-1-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	267	107	266	106	90-110	0	20	mg/kg	08.01.19 21:22	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3097309 — Matrix: Solid — Date Prep: 08.01.19
MB Sample Id: 7683355-1-BLK — LCS Sample Id: 7683355-1-BKS — LCSD Sample Id: 7683355-1-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	270	108	269	108	90-110	0	20	mg/kg	08.01.19 18:55	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3097307 — Matrix: Soil — Date Prep: 08.01.19
Parent Sample Id: 632560-006 — MS Sample Id: 632560-006 S — MSD Sample Id: 632560-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	260	252	542	112	543	112	90-110	0	20	mg/kg	08.01.19 23:09	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3097307 — Matrix: Soil — Date Prep: 08.01.19
Parent Sample Id: 632659-026 — MS Sample Id: 632659-026 S — MSD Sample Id: 632659-026 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	36.7	249	311	110	313	111	90-110	1	20	mg/kg	08.01.19 21:41	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3097309 — Matrix: Soil — Date Prep: 08.01.19
Parent Sample Id: 632692-014 — MS Sample Id: 632692-014 S — MSD Sample Id: 632692-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8.39	250	275	107	277	107	90-110	1	20	mg/kg	08.01.19 19:11	

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

QC Summary 632692

LT Environmental, Inc.

JRU 48

Analytical Method: Chloride by EPA 300 | Prep Method: E300P
Seq Number: 3097309 | Matrix: Soil | Date Prep: 08.01.19
Parent Sample Id: 632694-005 | MS Sample Id: 632694-005 S | MSD Sample Id: 632694-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	24.2	252	313	115	314	115	90-110	0	20	mg/kg	08.01.19 20:27	X

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3097289 | Matrix: Solid | Date Prep: 08.01.19
MB Sample Id: 7683311-1-BLK | LCS Sample Id: 7683311-1-BKS | LCSD Sample Id: 7683311-1-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	1080	108	1070	107	70-135	1	20	mg/kg	08.01.19 21:27	
Diesel Range Organics (DRO)	<8.13	1000	1160	116	1170	117	70-135	1	20	mg/kg	08.01.19 21:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		96		96		70-135	%	08.01.19 21:27
o-Terphenyl	86		95		96		70-135	%	08.01.19 21:27

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3097289 | Matrix: Soil | Date Prep: 08.01.19
Parent Sample Id: 632692-001 | MS Sample Id: 632692-001 S | MSD Sample Id: 632692-001 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)	10.5	997	1140	113	1150	114	70-135	1	20	mg/kg	08.01.19 22:36	
Diesel Range Organics (DRO)	14.0	997	1200	119	1220	121	70-135	2	20	mg/kg	08.01.19 22:36	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		98		70-135	%	08.01.19 22:36
o-Terphenyl	92		91		70-135	%	08.01.19 22:36

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

QC Summary 632692

LT Environmental, Inc.

JRU 48

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

Seq Number: 3097359 Matrix: Solid Date Prep: 08.01.19

MB Sample Id: 7683305-1-BLK LCS Sample Id: 7683305-1-BKS LCSD Sample Id: 7683305-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000980	0.100	0.107	107	0.110	110	70-130	3	35	mg/kg	08.01.19 16:27	
Toluene	0.000830	0.100	0.0983	98	0.101	101	70-130	3	35	mg/kg	08.01.19 16:27	
Ethylbenzene	0.000770	0.100	0.0988	99	0.101	101	70-130	2	35	mg/kg	08.01.19 16:27	
m,p-Xylenes	0.00143	0.200	0.197	99	0.203	102	70-130	3	35	mg/kg	08.01.19 16:27	
o-Xylene	0.000700	0.100	0.101	101	0.105	105	70-130	4	35	mg/kg	08.01.19 16:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		101		103		70-130	%	08.01.19 16:27
4-Bromofluorobenzene	108		102		107		70-130	%	08.01.19 16:27

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

Seq Number: 3097359 Matrix: Soil Date Prep: 08.01.19

Parent Sample Id: 632440-006 MS Sample Id: 632440-006 S MSD Sample Id: 632440-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.101	101	0.108	108	70-130	7	35	mg/kg	08.01.19 19:44	
Toluene	0.000480	0.100	0.0942	94	0.101	101	70-130	7	35	mg/kg	08.01.19 19:44	
Ethylbenzene	<0.00200	0.100	0.0952	95	0.102	102	70-130	7	35	mg/kg	08.01.19 19:44	
m,p-Xylenes	<0.00101	0.200	0.191	96	0.206	102	70-130	8	35	mg/kg	08.01.19 19:44	
o-Xylene	<0.000344	0.100	0.0978	98	0.106	106	70-130	8	35	mg/kg	08.01.19 19:44	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		103		70-130	%	08.01.19 19:44
4-Bromofluorobenzene	98		106		70-130	%	08.01.19 19:44

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

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

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

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

XENCO LABORATORIES

Chain of Custody

Work Order No: 632692

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

www.xenco.com Page 1 of 2

Project Manager:	DAN MOIR	Bill to: (if different)	KYLE LITTRELL
Company Name:	LT ENVIRONMENTAL	Company Name:	XTO ENERGY
Address:	3300 NORTH A STREET	Address:	3104 E. GREENE ST
City, State ZIP:	MIDLAND, TX 79705	City, State ZIP:	CARLSBAD, NM 88220
Phone:	(432)-236-3849	Email:	abyers@ltenv.com & dmoir@ltenv.com

Work Order Comments

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

Project Name:	JRU 48	Turn Around	
Project Number:	012918032	Routine	☐
P.O. Number:	2RP-1142 & 2RP-2556	Rush:	Same day
Sampler's Name:	Anna Byers	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.4/0.4	Thermometer ID	BE
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No N/A	Correction Factor:	0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
SW20	S	7/30/19	10:50	4.5-9'	1	X	X	X
SW21	S	7/30/19	11:00	9-13.5'	1	X	X	X
SW22	S	7/30/19	11:15	13.5-18'	1	X	X	X
SW23	S	7/30/19	12:00	13.5-18'	1	X	X	X
SW24	S	7/30/19	12:25	9-13.5'	1	X	X	X
SW26	S	7/30/19	14:15	13.5-18'	1	X	X	X
SW25	S	7/30/19	12:30	4.5-9'	1	X	X	X
SW27	S	7/30/19	14:30	9-13.5'	1	X	X	X
SW28	S	7/30/19	14:45	4.5-9'	1	X	X	X
FS15	S	7/30/19	13:00	18'	1	X	X	X

Work Order Notes

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

Sample Comments

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

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	Fed Ex	07/31/2019 13:50	2		07/31/2019 14:00
3		7/31/2019 15:40	4		8/1/19 1210
5			6		

Revised Date 051418 Rev. 2018.1

Chain of Custody

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432) 704-5440 EL Paso,TX (915) 585-3443 Lubbock,TX (806) 794-1296 Craslbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701

Work Order No: 637090

www.xenco.com Page 2 of 2

Project Manager:	DAN MOIR	Bill to: (if different)	KYLE LITTRELL
Company Name:	LT ENVIRONMENTAL	Company Name:	XTO
Address:	3300 NORTH A ST	Address:	3104 E. GREENE ST
City, State ZIP:	MIDLAND TX 79705	City, State ZIP:	CARLSBAD NM 88220
Phone:	432 236 3849	Email:	abyers@ltenv.com

Work Order Comments

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

Project Name:	JRU 48	Turn Around	
Project Number:	01291B032	Routine ☐	
Project Location	Rural Eddy County	Rush: Same day	
Sampler's Name:	Anna Byers	Due Date:	
PO #:	2RP-11424 2RP-2566	Quote #:	

SAMPLE RECEIPT			
Temperature (°C):	0.4+0.4	Temp Blank:	Yes (No)
Received Intact:	(Yes) No	Wet Ice:	(Yes) No
Cooler Custody Seals:	Yes No (N/A)	Thermometer ID	CC
Sample Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
		Total Containers:	

ANALYSIS REQUEST

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
	SW29	S	7/30/19	1530	13.5-18'	1	X	X	X
	SW30	S		1600	9-13.5'	1	X	X	X
	SW31	S		1700	4.5-9'	1	X	X	X
	SW32	S		1715	0.5'-4.5'	1	X	X	X
	FS16	S		1500	18'	1	X	X	X

Preservative Codes

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

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

Sample Comments

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

Circle Method(s) and Metal(s) to be analyzed

TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U

1631 / 245.1 / 7470 / 7471 : Hg

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		07/31/2019 13:50	2		07/31/2019 14:00
3		FedEx	7/31/19 15:00	4		8/1/19
5				6		1210

Revised Date 022619 Rev. 2019.1

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

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 08/01/2019 12:10:00 PM

Work Order #: 632692

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

Temperature Measuring device used : R8

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

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

Analyst:

PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 08/01/2019

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 08/02/2019

Jessica Kramer

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

COMMENTS

Action 4613

COMMENTS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 4613
	Action Type: [C-141] Release Corrective Action (C-141)

COMMENTS

Created By	Comment	Comment Date
bbillings	DTW has been specifically site determined by boring at >103ft. Can close.	7/14/2021
bbillings	Closure report covers two incidents 1) nMLB1215336744 and 2) nAB1429333358	7/14/2021

District I
1625 N. French Dr., Hobbs, NM 88240
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1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 4613

CONDITIONS

Operator:	OGRID:
XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	5380
	Action Number: 4613
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bbillings	With boring no other conditions for closure. Thank you. Both associated incidents are closed	7/14/2021