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	NAB1917835106
District RP	2RP-5503
Facility ID	
Application ID	pAB1917834838

Release Notification

Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Kyle Littrell	Contact Telephone 432-221-7331
Contact email Kyle_Littrell@xtoenergy.com	Incident # *(assigned by OCD)* NAB1917835106
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.363081 Longitude -103.83766
(NAD 83 in decimal degrees to 5 decimal places)

Site Name James Ranch Unit DI2 Central Tank Battery	Site Type Bulk Storage and Separation Facility
Date Release Discovered 6/8/2019	API# *(if applicable)* 30-015-39793 (JRU DI2 #139H)

Unit Letter	Section	Township	Range	County
K	25	22S	30E	Eddy

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

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) 356.57	Volume Recovered (bbls) 355
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A 6" flowline between VRT and LACT units failed. Fluid was released to lined tank containment and to the well pad. All wells were immediately shut in. A vacuum truck recovered fluids from the containment and from the well pad. Fluids were returned to production. The line was repaired and the facility was returned to operation. Additional third party resources have been retained to assist with remediation.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NAB1917835106
District RP	2RP-5503
Facility ID	
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Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release of a volume of 25 barrels or more

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Notice provided by Bryan Foust to Mike Bratcher, Rob Hamlet, Victoria Venegas, and Jim Griswold (NMOCD), Jim Amos and Deborah McKinney (BLM) on 6/10/2019 by email

Initial Response

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

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 6/21/2019

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

OCD Only

Received by: Amalia Bustamante Date: 6/27/2019

State of New Mexico
Oil Conservation Division

Incident ID	NAB1917835106
District RP	2RP-5503
Facility ID	
Application ID	pAB1917834838

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	NAB1917835106
District RP	2RP-5503
Facility ID	
Application ID	pAB1917834838

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

Printed Name: _____Kyle Littrell_____ Title: _____SH&E Coordinator_____

Signature:_____ _____ Date: ___03/04/2020_

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

OCD Only

Received by: _____ Date: _____

Incident ID	NAB1917835106
District RP	2RP-5503
Facility ID	
Application ID	pAB1917834838

Remediation Plan

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

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

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

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

☒ Extents of contamination must be fully delineated.

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

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

Printed Name: Kyle Littrell Title: SH&E Coordinator

Signature: Date: 03/04/2020

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

OCD Only

Received by: Date:

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

Signature: Date:

A proud member of WSP

LT Environmental, Inc.
3300 North "A" Street
Building 1, Unit 222
Midland, Texas 79705
432.704.5178

March 4, 2020

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

RE: Deferral Request
James Ranch Unit DI2 Central Tank Battery
Remediation Permit Number 2RP-5503
Incident ID NAB1917835106
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Deferral Request detailing remediation activities at the James Ranch Unit DI2 Central Tank Battery (Site) in Unit K, Section 25, Township 22 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the remediation activities was to address impacts to soil after a crude oil release at the Site. Based on the results of the remediation activities, XTO is submitting this Deferral Request of final remediation and respectfully requesting no further action (NFA) until any major facility deconstruction or the Site is abandoned.

RELEASE BACKGROUND

On June 8, 2019, a six-inch flowline failed, causing a crude oil release to a lined tank containment and to the well pad. An estimated 356.57 barrels (bbls) of crude oil was released. A vacuum truck was dispatched to the Site and recovered approximately 355 bbls of crude oil. The line was repaired, and the facility was returned to operation. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on June 21, 2019 and was assigned Remediation Permit (RP) Number 2RP-5503.

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the water well data from the nearest active water well. The nearest permitted water well with depth to groundwater data is the United Stated Geological Survey (USGS) well 322215103502701 located approximately 0.58 miles north of the Site. The water well has a depth to groundwater of 419 feet bgs. The total depth of the water well was undetermined.

Ground surface elevation at the water well location is 3,362 feet, which is 22 feet higher in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is an unnamed dry wash located approximately 4,930 feet north of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, or church. The nearest wetland is greater than 300 feet from the Site. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a low potential karst area. The Site receptors are depicted in Figure 1.

CLOSURE CRITERIA

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

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

SITE ASSESSMENT AND EXCAVATION ACTIVITIES

On July 1, 2019, LTE inspected the Site to evaluate the release extent and collect preliminary soil samples. Surface hydrocarbon staining was observed in the release area. LTE personnel collected five preliminary soil samples (SS01 through SS05) within the release area from a depth of 0.5 feet bgs to assess the lateral extent of soil impacts. The soil samples were screened for volatile aromatic hydrocarbons and chloride using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. The soil samples were placed directly into pre-cleaned glass jars, labeled with location, date, time, sampler, and method of analysis, and immediately placed on ice. The samples were shipped to Xenco Laboratories (Xenco) in Carlsbad, New Mexico, at 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures for analysis of BTEX by United States Environmental Protection Agency (EPA) Method 8021B, TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) by EPA Method 8015M/D, and chloride by EPA Method 300.0. The release extent and preliminary soil sample locations were mapped using a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photo documentation of the release was conducted, and a photographic log of the Site and the remediation work is included as Attachment 2.

Laboratory analytical results indicated that Total GRO and DRO, and TPH concentrations exceeded the Closure Criteria in preliminary soil samples SS01 through SS03 and SS05. Based on the laboratory analytical results, the observation of visible staining, and field screenings, delineation and excavation appeared to be warranted.

Further delineation and remediation efforts were postponed due to ongoing frac operations near the release which resulted in site activity restrictions due to safety concerns. Per 19.15.29.12.B.(1) New Mexico Administrative Code (NMAC), two extensions for submission of a Remediation Plan or Closure Request were granted. The initial extension was requested on September 6, 2019 and approved on September 9, 2020. While remedial activities were ongoing and MicroBlaze® was applied, the second extension was granted on December 3, 2019, by the NMOCD District II office extending the deadline to March 5, 2020.

Between September 23 and November 18, 2019, LTE personnel was able to return to the Site after frac operations were complete to oversee excavation activities conducted with a Track Hoe and a hydro-vacuum truck. Hydro-excavation was conducted in the areas around active production equipment and active pipelines. XTO safety policy restricts soil-disturbing activities within two feet of any on-site production equipment and pipelines. To direct all excavation activities, LTE screened soil samples using a PID and Hach® chloride QuanTab® test strips. Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavations. Due to the presence of the production equipment, the excavation occurred in two areas. One area, to the north, was excavated to four feet bgs and LTE personnel collected one floor sample, FS02, and one sidewall sample, SW03. The other excavation, to the south, was excavated to 4.5 feet bgs and LTE personnel collected one floor sample, FS01, and two sidewall samples, SW01 and SW02. Floor sample FS01 was excavated further to 4.5’ bgs and FS01A was collected. The 5-point composite samples were collected by depositing 5 aliquots of soil into a 1-gallon, resealable plastic bag, and homogenizing the samples by thoroughly mixing. The excavation soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Carlsbad, New Mexico. The excavation soil sample locations are presented on Figure 3.

The northern excavation measured an estimated 176 square feet and an estimated 26 cubic yards of impacted soil was removed. Laboratory analytical results indicated that benzene, BTEX, TPH GRO/DRO, TPH, and chloride concentrations were below the Closure Criteria in floor sample FS02 collected at 4 feet bgs and in SW03 collected from zero to four feet bgs in the northern excavation.

The southern excavation measured an estimated 336 square feet and an estimated 56 cubic yards of impacted soil was removed. Laboratory analytical results indicated that TPH GRO/DRO concentrations exceeded the Closure Criteria in floor sample FS01 collected at 4 feet bgs and in SW01 and SW02 collected from zero to four feet bgs in the southern excavation. Further excavation was conducted and TPH GRO/DRO concentrations in FS01A at 4.5 feet bgs were

determined to be below the Closure Criteria. Laboratory analytical results are summarized in Table 1, and the laboratory analytical reports are included in Attachment 3.

A total of approximately 82 cubic yards of impacted soil were removed from the excavations. The impacted soil was transported and properly disposed of at the R360 disposal facility located in Carlsbad, New Mexico.

DELINEATION AND ADDITIONAL REMEDIATION ACTIVITIES

On November 19, 2019 LTE personnel returned to the Site to address areas of impacted soil, as indicated by visual observations and laboratory analytical results, that could not be remediated with mechanical equipment or a hydrovaccum truck due to the presence of production equipment. This portion of the release area was located between two large tank battery containments also contained numerous above-ground lines, valves, and other pieces of production equipment. Photographic documentation of this area is included in the photographic log in Attachment 2. XTO safety policy prohibits the disturbance of any area within two feet of any production equipment. LTE personnel oversaw the application of MicroBlaze® in this portion of the release extent. The area shown on Figure 3 was sprayed with a dilution of MicroBlaze® and freshwater. The area was then raked, and portions of the area were hand excavated with the use of shovels where it was possible to do so. The MicroBlaze® dilution was reapplied in the excavated areas and composite sampling of the area was planned for twelve weeks later.

On November 20, 2019, LTE conducted pothole sampling activities to delineate the lateral and vertical extent of impacted soil remaining at the Site. LTE personnel collected three delineation potholes, PH01 through PH03 in the locations shown on Figure 2. Three soil samples were collected from each pothole at depths of one, two and four feet bgs. On January 20, 2020 LTE personnel returned to the Site, applied freshwater to the area sprayed with MicroBlaze® and collected a delineation borehole sample in the area of preliminary soil sample SS02 to vertically delineate impacted soil. Delineation borehole sample BH01 was collected at one foot bgs. Soil from each discreet sample was field screened using a PID and Hach® chloride QuanTab® test strips. The delineation soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Carlsbad, New Mexico. The soil sample locations are depicted on Figure 2 and soil sampling logs are included in Attachment 1.

Laboratory analytical results indicated that benzene, BTEX, TPH GRO/DRO, TPH, and chloride concentrations were below the Closure Criteria in all delineation soil samples. Based on the laboratory analytical results, the lateral and vertical extent of impacted soil appears to be defined. Laboratory analytical results are summarized in Table 1, and the laboratory analytical reports are included in Attachment 3.

On February 12, 2020, after the predetermined amount of time had passed since the application of MicroBlaze® in the area between the two large tank batteries, LTE personnel collected seven

composite floor samples, FS03 through FS09. The floor samples were collected at a depth of 0.5 feet bgs. The 5-point composite samples were collected by depositing 5 aliquots of soil into a 1-gallon, resealable plastic bag, and homogenizing the samples by thoroughly mixing. Soil from each composite sample was field screened using a PID and Hach® chloride QuanTab® test strips. The excavation soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Carlsbad, New Mexico. The excavation soil sample locations are presented on Figure 3. An estimate 28 cubic yards of impacted soil were removed from this area. The impacted soil was transported and properly disposed of at the R360 disposal facility located in Carlsbad, New Mexico.

Laboratory analytical results indicated that TPH GRO/DRO and TPH concentrations exceeded the Closure Criteria in floor samples FS03 through FS09 collected at 0.5 feet bgs. However, TPH GRO/DRO concentrations in floor samples FS03 through FS09, ranging from 1,230 mg/kg to 6,430 mg/kg, exhibited a decrease after the application of MicroBlaze® when compared to preliminary surface sample SS02, with a concentration of 8,690 mg/kg, collected in the same area and depth. In addition, TPH concentrations in floor samples FS03 through FS09, ranging from 2,580 mg/kg to 7,080 mg/kg also resulted in a decrease after the application of MicroBlaze® when compared to preliminary surface sample SS02, with a concentration of 9,060 mg/kg. Laboratory analytical results are summarized in Table 1, and the laboratory analytical reports are included in Attachment 3.

DEFERRAL REQUEST

A total of 110 cubic yards of impacted soil were excavated from the Site; however, residual impacted soil was left in place for compliance with the XTO safety policy regarding soil-disturbing activities within two feet of production equipment and pipelines. In addition to mechanical excavation and hydro-excavation, hand shoveling was conducted to remove impacted soil to the extent possible in the active production areas and adjacent to pipelines.

The exterior excavation sidewall and floor samples are compliant the Closure Criteria except for sidewall samples SW02 and SW03 located adjacent to tank battery and equipment containments, and floor samples FS03 through FS09, which represent soil remaining in place between two tank battery containments and around the above ground lines, valves, and active production equipment.

Sidewall samples SW02 and SW03 are delineated laterally to the north by confirmation soil samples collected in the northern excavation, to the east by PH01, to the south by the tank battery containment and PH02, and to the west by the tank battery and production equipment containments. In addition, they are delineated vertically by FS01A. Floor samples FS03 through FS09 are delineated laterally to the north by PH01, to the south by PH03, and to the east and west by the tank battery containments surrounding the excavation. An estimated 56 cubic yards

of impacted soil remains in place at the Site, assuming a depth of four feet bgs near sidewall samples SW02 and SW03 and a depth of one-foot bgs near floor samples FS03 through FS09.

XTO requests to backfill the excavations and complete remediation during any future major construction/alteration or final plugging and abandonment, whichever occurs first. LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. XTO requests deferral of final remediation for RP Number 2RP-5503. Upon approval of this Deferral Request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing Site conditions. An updated NMOCD Form C-141 is attached to this request.

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

Sincerely,
LT ENVIRONMENTAL, INC.

Tacoma Morrissey
Project Geologist

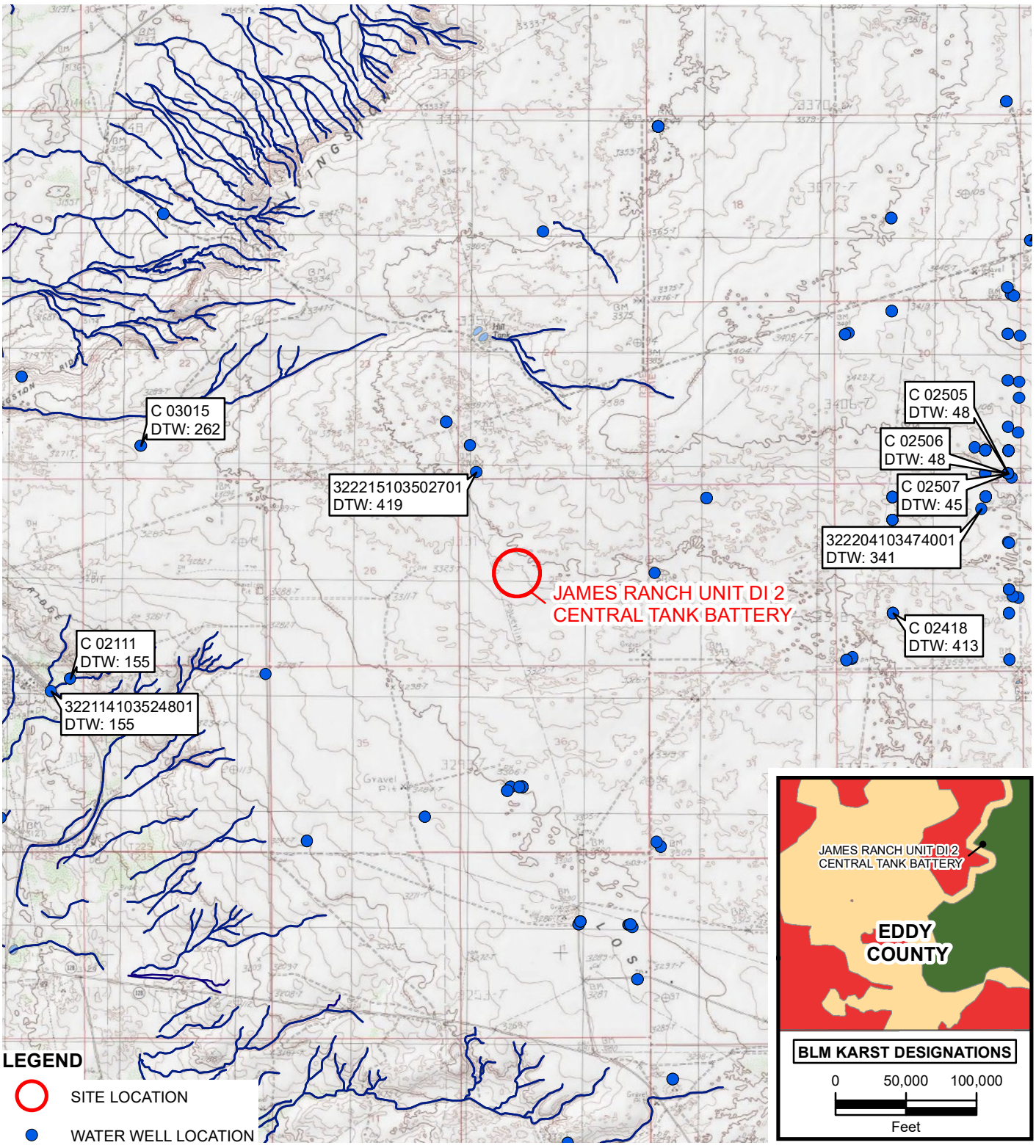
Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
United States Bureau of Land Management- New Mexico
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD

Appendices:

Figure 1	Site Location Map
Figure 2	Delineation Soil Sample Locations
Figure 3	Excavation Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Lithologic/Soil Sampling Logs
Attachment 2	Photographic Log
Attachment 3	Laboratory Analytical Reports

FIGURES



NOTE: REMEDIATION PERMIT NUMBER 2RP-5503
DTW: DEPTH TO WATER IN FEET

FIGURE 1
SITE LOCATION MAP
JAMES RANCH UNIT DI 2 CENTRAL TANK BATTERY
UNIT K SEC 25 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

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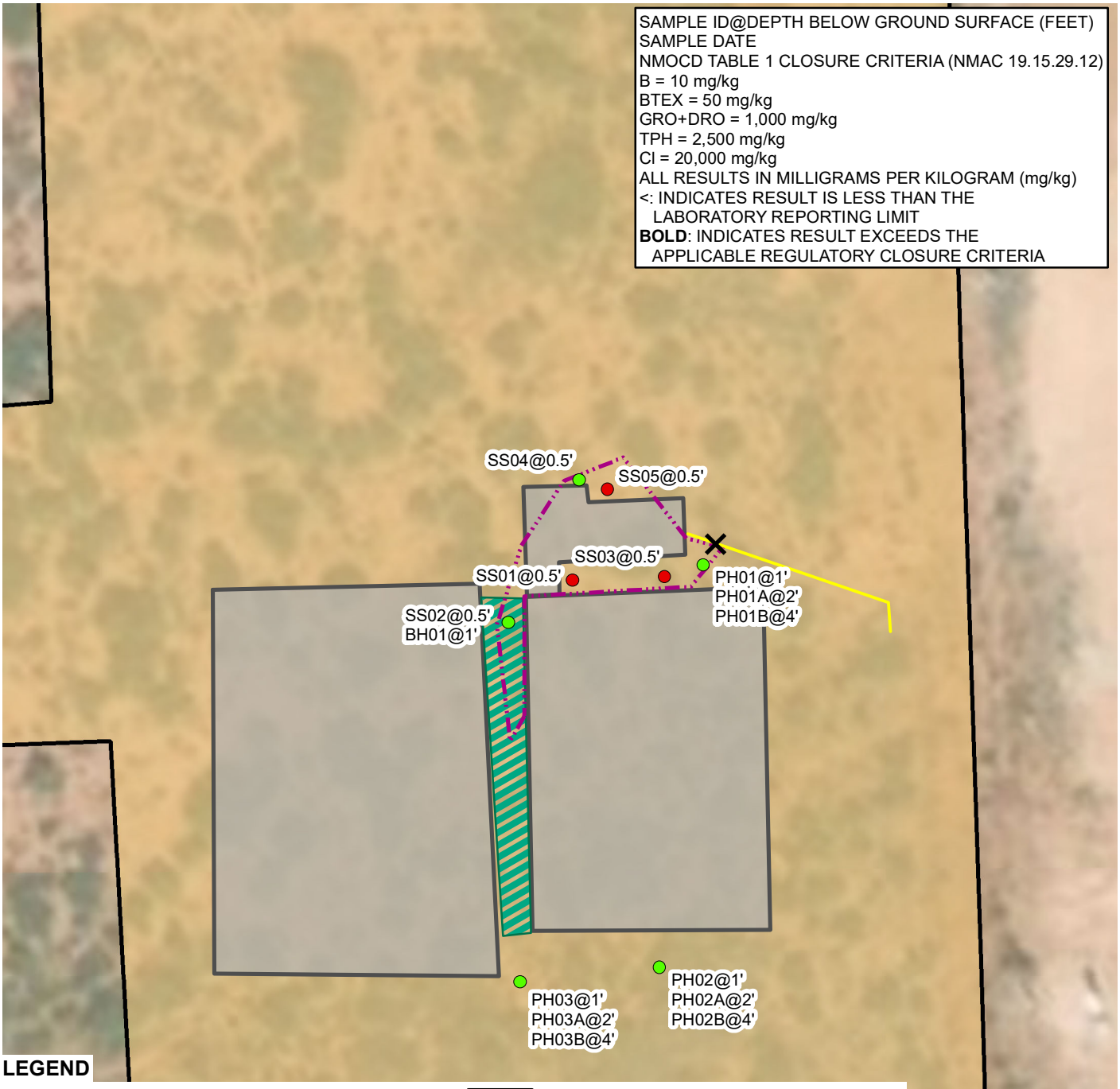

B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO: GASOLINE RANGE ORGANICS
DRO: DIESEL RANGE ORGANICS
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5503

FIGURE 2
DELINEATION SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT DI 2 CENTRAL TANK BATTERY
UNIT K SEC 25 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

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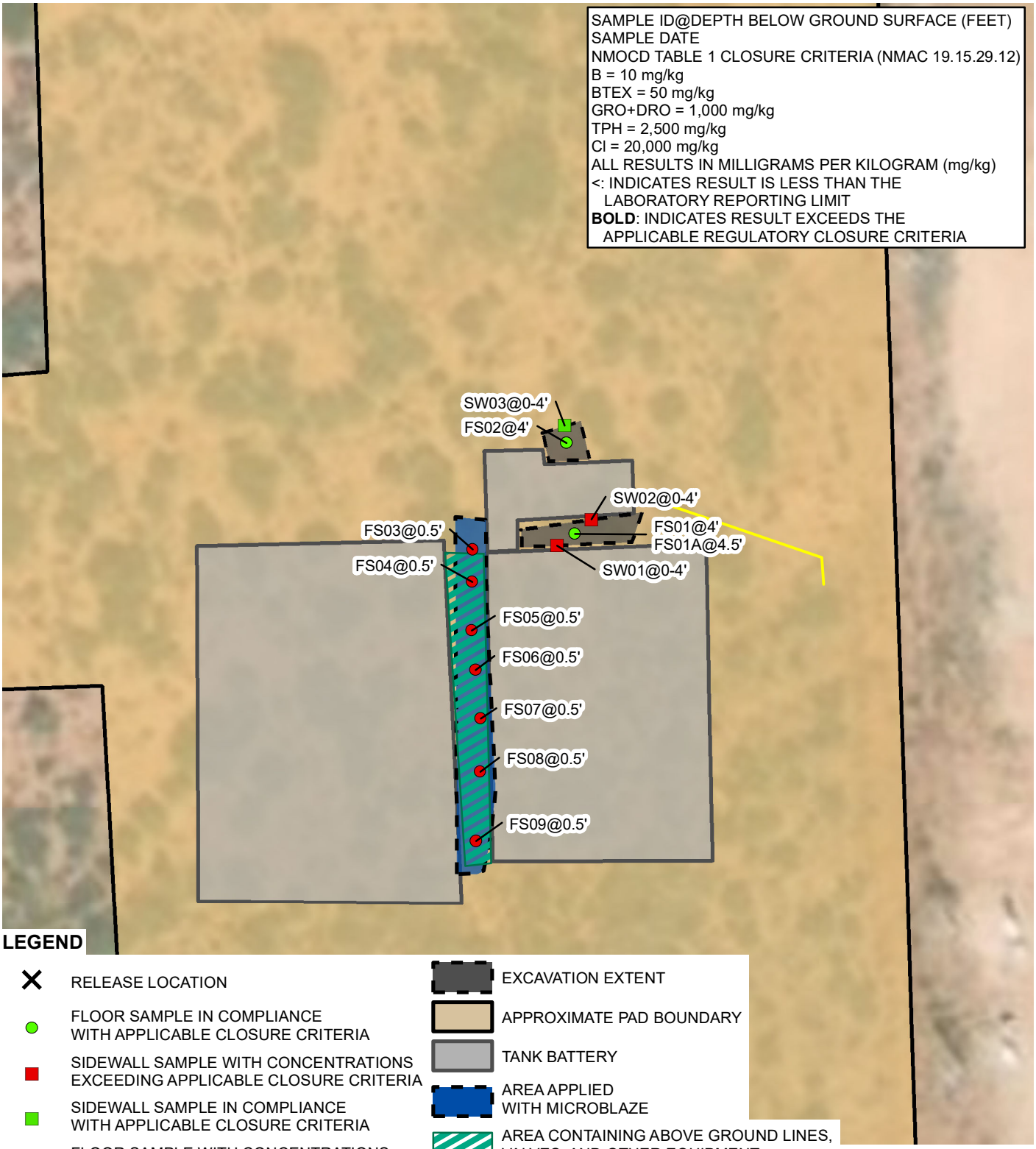

B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO: GASOLINE RANGE ORGANICS
DRO: DIESEL RANGE ORGANICS
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5503

FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT DI 2 CENTRAL TANK BATTERY
UNIT K SEC 25 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919141_JRU DI2 CTB\012919141_FIG03_EXCAVATION_5503.mxd

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS

JAMES RANCH UNIT DI2 CENTRAL TANK BATTERY
REMEDIATION PERMIT NUMBER 2RP-5503
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**
SS01	0.5	07/01/2019	<0.0994	1.70	1.86	29.9	33.5	969	2,580	99.4	**3,550**	**3,650**	14.1
SS02	0.5	07/01/2019	<0.100	2.03	2.13	31.3	35.5	1,330	7,360	373	**8,690**	**9,060**	74.0
SS03	0.5	07/01/2019	0.00420	0.135	0.0501	0.847	1.04	585	6,000	313	**6,590**	**6,900**	200
SS04	0.5	07/01/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	176
SS05	0.5	07/01/2019	<0.100	0.721	1.49	30.3	32.5	1,110	7,590	362	**8,700**	**9,060**	116
BH01	1	01/30/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	299	<50.0	299	299	64.7
PH01	1	11/20/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	<10.1
PH01A	2	11/20/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	14.5
PH01B	4	11/20/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.1	<50.1	<50.1	<50.1	<50.1	43.2
PH02	1	11/20/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	<49.8	25.5
PH02A	2	11/20/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	21.9
PH02B	4	11/20/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	<10.0
PH03	1	11/20/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.1	<50.1	<50.1	<50.1	<50.1	60.7
PH03A	2	11/20/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	63.9
PH03B	4	11/20/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	<10.1
FS01	4	10/07/2019	<0.0197	<0.0197	<0.0197	<0.0197	<0.0197	<49.9	1,060	162	**1,060**	1,220	65.0
FS01A	4.5	11/18/2019	<0.000990	<0.000990	<0.000990	<0.000990	<0.000990	<50.1	142	<50.1	142	142	265
FS02	4	10/07/2019	<0.0196	<0.0196	<0.0196	<0.0196	<0.0196	<50.0	81.6	<50.0	81.6	81.6	46.1
FS03	0.5	02/12/2020	<0.0196	<0.0196	<0.0196	<0.0196	<0.0196	<50.1	4,330	441	**4,330**	**4,770**	278
FS04	0.5	02/12/2020	<0.0196	<0.0196	<0.0196	<0.0196	<0.0196	<50.0	2,860	293	**2,860**	**3,150**	508
FS05	0.5	02/12/2020	<0.0185	<0.0185	<0.0185	0.129	0.129	<50.2	3,040	292	**3,040**	**3,330**	168
FS06	0.5	02/12/2020	<0.0192	<0.0192	0.109	1.12	1.23	<251	6,430	653	**6,430**	**7,080**	62.2
FS07	0.5	02/12/2020	<0.0185	<0.0185	<0.0185	0.0584	0.0584	<49.8	2,320	255	**2,320**	**2,580**	240

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TABLE 1
SOIL ANALYTICAL RESULTS

JAMES RANCH UNIT DI2 CENTRAL TANK BATTERY
REMEDIATION PERMIT NUMBER 2RP-5503
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**
FS08	0.5	02/12/2020	<0.0192	<0.0192	<0.0192	<0.0192	<0.0192	<49.9	2,370	231	**2,370**	**2,600**	261
FS09	0.5	02/12/2020	<0.0189	<0.0189	<0.0189	0.0789	0.0789	<50.0	2,520	232	**2,520**	**2,750**	189
SW01	0 - 4	10/07/2019	<0.0200	<0.0200	<0.0200	0.0200	0.0200	<50.2	1,230	159	**1,230**	1,390	66.4
SW02	0 - 4	10/07/2019	<0.0187	<0.0187	<0.0187	<0.0187	<0.0187	<50.0	1,830	263	**1,830**	2,090	142
SW03	0 - 4	10/07/2019	<0.0195	<0.0195	<0.0195	<0.0195	<0.0195	<49.7	<49.7	<49.7	<49.7	<49.7	99.5

Notes:

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

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ATTACHMENT 1: LITHOLOGIC / SOIL SAMPLING LOG

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
A proud member of WSP
Compliance · Engineering · Remediation

BH or PH Name: PH01	Date: 11/20/19 & 11/21/19
Site Name: JRU DI2 CTB	
RP or Incident Number: 2RP-5503	
LTE Job Number:	
Logged By: Will	Method: Backhoe
Lat/Long:	Field Screening: Chloride, PID
Hole Diameter:	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
D	<128	0.1	N		1'	1	CHCE	caliche, dry, no odor, tan-white
D	<128	0.0	N		2'	2	CHCE	tan, dry, no odor
D	<128	0.0	N		4'	4		fine-medium sand, compacted, dry

1201
0940
0946

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
A proud member of WSP
Compliance · Engineering · Remediation

BH or PH Name: PH02	Date: 11/20/19
Site Name: JRU DI2 CTB	
RP or Incident Number: 2RP-5303	
LTE Job Number:	
Logged By: Will	Method: Back hoe
Lat/Long:	Field Screening: Chloride, PID
Hole Diameter:	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
D	<128	0.0	N	1336	1'	1	CHCE	dry, tan - white, no odor
D	<128	0.0	N	1338	2'	2	CHCE	Same as above (SSA)
D	<128	0.0	N	1349	4'	4	CHCE	SSA

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

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
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BH or PH Name: PH03 | Date: 11/20/19
Site Name: JRU DI2 CTB
RP or Incident Number: 2RP-5503
LTE Job Number:

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: Will | Method: Backhoe
Lat/Long: | Field Screening: Chloride, PID | Hole Diameter: | Total Depth: 4'
Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
1359 D	<128	0.0	N		1'	1	CHCE	dry, no oder, tan-white
1400 D	<128	0.0	N		2'	2	CHCE	Same as above (SAA)
1404 D	<128	0.0	N		4'	4	CHCE	SAA

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

BH or PH Name: BH01 | Date: 1/30/20
Site Name: JRU D12 CTB
RP or Incident Number: 2RP - 5503
LTE Job Number:

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: Armando | Method: Hand Auger
Lat/Long: | Field Screening: Chloride, PID | Hole Diameter: | Total Depth: 1'
Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
1538 D	<124	19.6	N		1'	0–12	CHCE	white-tan, no oder, no staining

ATTACHMENT 2: PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

Photograph 1: View west of release staining between equipment.

Photograph 2: Western view of northernmost edge of the release extent.

Photograph 3: View north of the release extent between tank batteries.

Photograph 4: View east of the southern excavation.

James Ranch Unit DI2 Central Tank Battery
32.363081, -103.83766
Photographs Taken: July 1, 2019 through October 7, 2019

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PHOTOGRAPHIC LOG

Photograph 5: View west of northern excavation.

Photograph 6: View east of hand shoveled excavation.

Photograph 7: View south of area after MicroBlaze® treatment.

Photograph 8: View north of area after MicroBlaze® treatment.

ATTACHMENT 3: LABORATORY ANALYTICAL REPORTS

Analytical Report 629720

for

LT Environmental, Inc.

Project Manager: Ashley Ager

JRU D12 CTB (2RP-5503)

012919141

11-JUL-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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)

11-JUL-19

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

Reference: XENCO Report No(s): **629720**
JRU D12 CTB (2RP-5503)
Project Address: Delaware Basin

Ashley Ager:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 629720. 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. 629720 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 629720

LT Environmental, Inc., Arvada, CO

JRU D12 CTB (2RP-5503)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	07-01-19 11:45	6 ft	629720-001
SS02	S	07-01-19 12:05	6 ft	629720-002
SS03	S	07-01-19 12:20	6 ft	629720-003
SS04	S	07-01-19 12:40	6 ft	629720-004
SS05	S	07-01-19 13:00	6 ft	629720-005

CASE NARRATIVE

Client Name: LT Environmental, Inc.
Project Name: JRU D12 CTB (2RP-5503)

Project ID: *012919141*
Work Order Number(s): *629720*

Report Date: *11-JUL-19*
Date Received: *07/02/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3094602 TPH by SW8015 Mod
Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 629720-002,629720-005,629720-003.

Batch: LBA-3094957 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 629720-003,629720-005,629720-001,629720-002.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 629720

LT Environmental, Inc., Arvada, CO

Project Name: JRU D12 CTB (2RP-5503)

Project Id: 012919141
Contact: Ashley Ager
Project Location: Delaware Basin

Date Received in Lab: Tue Jul-02-19 08:05 am
Report Date: 11-JUL-19
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	629720-001		629720-002		629720-003		629720-004		629720-005	
	Field Id:	SS01		SS02		SS03		SS04		SS05	
	Depth:	6- ft		6- ft		6- ft		6- ft		6- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-01-19 11:45		Jul-01-19 12:05		Jul-01-19 12:20		Jul-01-19 12:40		Jul-01-19 13:00	
BTEX by EPA 8021B SUB: T104704400-18-16	***Extracted:***	Jul-08-19 15:00		Jul-08-19 15:00		Jul-08-19 15:00		Jul-08-19 15:00		Jul-08-19 15:00	
	Analyzed:	Jul-10-19 06:19		Jul-10-19 05:07		Jul-10-19 01:03		Jul-10-19 09:44		Jul-10-19 07:32	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.0994	0.0994	<0.100	0.100	0.00420	0.00199	<0.00200	0.00200	<0.100	0.100
Toluene		1.70	0.0994	2.03	0.100	0.135	0.00199	<0.00200	0.00200	0.721	0.100
Ethylbenzene		1.86	0.0994	2.13	0.100	0.0501	0.00199	<0.00200	0.00200	1.49	0.100
m,p-Xylenes		23.1	0.199	23.9	0.200	0.625	0.00398	<0.00399	0.00399	22.6	0.200
o-Xylene		6.84	0.0994	7.39	0.100	0.222	0.00199	<0.00200	0.00200	7.70	0.100
Total Xylenes		29.9	0.0994	31.3	0.100	0.847	0.00199	<0.00200	0.00200	30.3	0.100
Total BTEX		33.5	0.0994	35.5	0.100	1.04	0.00199	<0.00200	0.00200	32.5	0.100
Chloride by EPA 300 SUB: T104704400-18-16	***Extracted:***	Jul-03-19 16:00		Jul-03-19 16:00		Jul-03-19 16:00		Jul-03-19 16:00		Jul-03-19 16:00	
	Analyzed:	Jul-05-19 17:39		Jul-05-19 17:46		Jul-05-19 17:54		Jul-05-19 18:01		Jul-05-19 18:08	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		14.1	5.00	74.0	5.02	200	4.99	176	5.00	116	5.00
TPH by SW8015 Mod SUB: T104704400-18-16	***Extracted:***	Jul-05-19 08:00		Jul-05-19 08:00		Jul-05-19 08:00		Jul-05-19 08:00		Jul-05-19 08:00	
	Analyzed:	Jul-05-19 17:31		Jul-06-19 08:31		Jul-06-19 08:54		Jul-05-19 18:45		Jul-06-19 09:17	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		969	15.0	1330	74.9	585	74.9	<15.0	15.0	1110	75.0
Diesel Range Organics (DRO)		2580	15.0	7360	74.9	6000	74.9	<15.0	15.0	7590	75.0
Motor Oil Range Hydrocarbons (MRO)		99.4	15.0	373	74.9	313	74.9	<15.0	15.0	362	75.0
Total TPH		3650	15.0	9060	74.9	6900	74.9	<15.0	15.0	9060	75.0
Total GRO-DRO		3550	15.0	8690	74.9	6590	74.9	<15.0	15.0	8700	75.0

Jessica Kramer
Project Assistant

Certificate of Analytical Results 629720

LT Environmental, Inc., Arvada, CO

JRU D12 CTB (2RP-5503)

Sample Id: **SS01** Matrix: Soil Date Received:07.02.19 08.05
Lab Sample Id: 629720-001 Date Collected: 07.01.19 11.45 Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 07.03.19 16.00 Basis: Wet Weight
Seq Number: 3094579 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**14.1**	5.00	mg/kg	07.05.19 17.39		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 07.05.19 08.00 Basis: Wet Weight
Seq Number: 3094602 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**969**	15.0	mg/kg	07.05.19 17.31		1
Diesel Range Organics (DRO)	C10C28DRO	**2580**	15.0	mg/kg	07.05.19 17.31		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**99.4**	15.0	mg/kg	07.05.19 17.31		1
Total TPH	PHC635	**3650**	15.0	mg/kg	07.05.19 17.31		1
Total GRO-DRO	PHC628	**3550**	15.0	mg/kg	07.05.19 17.31		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	07.05.19 17.31	
o-Terphenyl	84-15-1	117	%	70-135	07.05.19 17.31	

Certificate of Analytical Results 629720

LT Environmental, Inc., Arvada, CO

JRU D12 CTB (2RP-5503)

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	07.02.19 08.05
Lab Sample Id:	629720-001	Date Collected:	07.01.19 11.45	Sample Depth:	6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	AMB	Date Prep:	07.08.19 15.00	Basis:	Wet Weight
Seq Number:	3094957			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0994	0.0994	mg/kg	07.10.19 06.19	U	50
Toluene	108-88-3	**1.70**	0.0994	mg/kg	07.10.19 06.19		50
Ethylbenzene	100-41-4	**1.86**	0.0994	mg/kg	07.10.19 06.19		50
m,p-Xylenes	179601-23-1	**23.1**	0.199	mg/kg	07.10.19 06.19		50
o-Xylene	95-47-6	**6.84**	0.0994	mg/kg	07.10.19 06.19		50
Total Xylenes	1330-20-7	**29.9**	0.0994	mg/kg	07.10.19 06.19		50
Total BTEX		**33.5**	0.0994	mg/kg	07.10.19 06.19		50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	240	%	70-130	07.10.19 06.19	**
1,4-Difluorobenzene	540-36-3	89	%	70-130	07.10.19 06.19	

Certificate of Analytical Results 629720

LT Environmental, Inc., Arvada, CO

JRU D12 CTB (2RP-5503)

Sample Id: **SS02** Matrix: Soil Date Received:07.02.19 08.05
Lab Sample Id: 629720-002 Date Collected: 07.01.19 12.05 Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 07.03.19 16.00 Basis: Wet Weight
Seq Number: 3094579 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**74.0**	5.02	mg/kg	07.05.19 17.46		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 07.05.19 08.00 Basis: Wet Weight
Seq Number: 3094602 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**1330**	74.9	mg/kg	07.06.19 08.31		5
Diesel Range Organics (DRO)	C10C28DRO	**7360**	74.9	mg/kg	07.06.19 08.31		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**373**	74.9	mg/kg	07.06.19 08.31		5
Total TPH	PHC635	**9060**	74.9	mg/kg	07.06.19 08.31		5
Total GRO-DRO	PHC628	**8690**	74.9	mg/kg	07.06.19 08.31		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	07.06.19 08.31	
o-Terphenyl	84-15-1	157	%	70-135	07.06.19 08.31	**

Certificate of Analytical Results 629720

LT Environmental, Inc., Arvada, CO

JRU D12 CTB (2RP-5503)

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	07.02.19 08.05
Lab Sample Id:	629720-002	Date Collected:	07.01.19 12.05	Sample Depth:	6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	AMB	Date Prep:	07.08.19 15.00	Basis:	Wet Weight
Seq Number:	3094957			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.100	0.100	mg/kg	07.10.19 05.07	U	50
Toluene	108-88-3	**2.03**	0.100	mg/kg	07.10.19 05.07		50
Ethylbenzene	100-41-4	**2.13**	0.100	mg/kg	07.10.19 05.07		50
m,p-Xylenes	179601-23-1	**23.9**	0.200	mg/kg	07.10.19 05.07		50
o-Xylene	95-47-6	**7.39**	0.100	mg/kg	07.10.19 05.07		50
Total Xylenes	1330-20-7	**31.3**	0.100	mg/kg	07.10.19 05.07		50
Total BTEX		**35.5**	0.100	mg/kg	07.10.19 05.07		50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	88	%	70-130	07.10.19 05.07	
4-Bromofluorobenzene	460-00-4	181	%	70-130	07.10.19 05.07	**

Certificate of Analytical Results 629720

LT Environmental, Inc., Arvada, CO

JRU D12 CTB (2RP-5503)

Sample Id: **SS03** Matrix: Soil Date Received:07.02.19 08.05
Lab Sample Id: 629720-003 Date Collected: 07.01.19 12.20 Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 07.03.19 16.00 Basis: Wet Weight
Seq Number: 3094579 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**200**	4.99	mg/kg	07.05.19 17.54		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 07.05.19 08.00 Basis: Wet Weight
Seq Number: 3094602 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**585**	74.9	mg/kg	07.06.19 08.54		5
Diesel Range Organics (DRO)	C10C28DRO	**6000**	74.9	mg/kg	07.06.19 08.54		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**313**	74.9	mg/kg	07.06.19 08.54		5
Total TPH	PHC635	**6900**	74.9	mg/kg	07.06.19 08.54		5
Total GRO-DRO	PHC628	**6590**	74.9	mg/kg	07.06.19 08.54		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	07.06.19 08.54	
o-Terphenyl	84-15-1	146	%	70-135	07.06.19 08.54	**

Certificate of Analytical Results 629720

LT Environmental, Inc., Arvada, CO

JRU D12 CTB (2RP-5503)

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	07.02.19 08.05
Lab Sample Id:	629720-003	Date Collected:	07.01.19 12.20	Sample Depth:	6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	AMB	Date Prep:	07.08.19 15.00	Basis:	Wet Weight
Seq Number:	3094957			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00420**	0.00199	mg/kg	07.10.19 01.03		1
Toluene	108-88-3	**0.135**	0.00199	mg/kg	07.10.19 01.03		1
Ethylbenzene	100-41-4	**0.0501**	0.00199	mg/kg	07.10.19 01.03		1
m,p-Xylenes	179601-23-1	**0.625**	0.00398	mg/kg	07.10.19 01.03		1
o-Xylene	95-47-6	**0.222**	0.00199	mg/kg	07.10.19 01.03		1
Total Xylenes	1330-20-7	**0.847**	0.00199	mg/kg	07.10.19 01.03		1
Total BTEX		**1.04**	0.00199	mg/kg	07.10.19 01.03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	198	%	70-130	07.10.19 01.03	**
1,4-Difluorobenzene	540-36-3	89	%	70-130	07.10.19 01.03	

Certificate of Analytical Results 629720

LT Environmental, Inc., Arvada, CO

JRU D12 CTB (2RP-5503)

Sample Id: **SS04** Matrix: Soil Date Received:07.02.19 08.05
Lab Sample Id: 629720-004 Date Collected: 07.01.19 12.40 Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 07.03.19 16.00 Basis: Wet Weight
Seq Number: 3094579 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**176**	5.00	mg/kg	07.05.19 18.01		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 07.05.19 08.00 Basis: Wet Weight
Seq Number: 3094602 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.05.19 18.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.05.19 18.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.05.19 18.45	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.05.19 18.45	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.05.19 18.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	07.05.19 18.45	
o-Terphenyl	84-15-1	78	%	70-135	07.05.19 18.45	

Certificate of Analytical Results 629720

LT Environmental, Inc., Arvada, CO

JRU D12 CTB (2RP-5503)

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	07.02.19 08.05
Lab Sample Id:	629720-004	Date Collected:	07.01.19 12.40	Sample Depth:	6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	AMB	Date Prep:	07.08.19 15.00	Basis:	Wet Weight
Seq Number:	3094957			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.10.19 09.44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.10.19 09.44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.10.19 09.44	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.10.19 09.44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.10.19 09.44	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.10.19 09.44	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.10.19 09.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	70-130	07.10.19 09.44	
1,4-Difluorobenzene	540-36-3	91	%	70-130	07.10.19 09.44	

Certificate of Analytical Results 629720

LT Environmental, Inc., Arvada, CO

JRU D12 CTB (2RP-5503)

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	07.02.19 08.05
Lab Sample Id:	629720-005	Date Collected:	07.01.19 13.00	Sample Depth:	6 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.03.19 16.00	Basis:	Wet Weight
Seq Number:	3094579			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**116**	5.00	mg/kg	07.05.19 18.08		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.05.19 08.00	Basis:	Wet Weight
Seq Number:	3094602			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**1110**	75.0	mg/kg	07.06.19 09.17		5
Diesel Range Organics (DRO)	C10C28DRO	**7590**	75.0	mg/kg	07.06.19 09.17		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**362**	75.0	mg/kg	07.06.19 09.17		5
Total TPH	PHC635	**9060**	75.0	mg/kg	07.06.19 09.17		5
Total GRO-DRO	PHC628	**8700**	75.0	mg/kg	07.06.19 09.17		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	07.06.19 09.17	
o-Terphenyl	84-15-1	160	%	70-135	07.06.19 09.17	**

Certificate of Analytical Results 629720

LT Environmental, Inc., Arvada, CO

JRU D12 CTB (2RP-5503)

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	07.02.19 08.05
Lab Sample Id:	629720-005	Date Collected:	07.01.19 13.00	Sample Depth:	6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	AMB	Date Prep:	07.08.19 15.00	Basis:	Wet Weight
Seq Number:	3094957			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.100	0.100	mg/kg	07.10.19 07.32	U	50
Toluene	108-88-3	**0.721**	0.100	mg/kg	07.10.19 07.32		50
Ethylbenzene	100-41-4	**1.49**	0.100	mg/kg	07.10.19 07.32		50
m,p-Xylenes	179601-23-1	**22.6**	0.200	mg/kg	07.10.19 07.32		50
o-Xylene	95-47-6	**7.70**	0.100	mg/kg	07.10.19 07.32		50
Total Xylenes	1330-20-7	**30.3**	0.100	mg/kg	07.10.19 07.32		50
Total BTEX		**32.5**	0.100	mg/kg	07.10.19 07.32		50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	208	%	70-130	07.10.19 07.32	**
1,4-Difluorobenzene	540-36-3	89	%	70-130	07.10.19 07.32	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 629720

LT Environmental, Inc.

JRU D12 CTB (2RP-5503)

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094579 Matrix: Solid Date Prep: 07.03.19
MB Sample Id: 7681373-1-BLK LCS Sample Id: 7681373-1-BKS LCSD Sample Id: 7681373-1-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	07.05.19 14:39	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094579 Matrix: Soil Date Prep: 07.03.19
Parent Sample Id: 629707-002 MS Sample Id: 629707-002 S MSD Sample Id: 629707-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	114	250	426	125	426	125	90-110	0	20	mg/kg	07.05.19 15:01	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094579 Matrix: Soil Date Prep: 07.03.19
Parent Sample Id: 629707-011 MS Sample Id: 629707-011 S MSD Sample Id: 629707-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	35.4	252	339	120	338	120	90-110	0	20	mg/kg	07.05.19 16:55	X

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3094602 Matrix: Solid Date Prep: 07.05.19
MB Sample Id: 7681476-1-BLK LCS Sample Id: 7681476-1-BKS LCSD Sample Id: 7681476-1-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	962	96	1000	100	70-135	4	20	mg/kg	07.05.19 10:09	
Diesel Range Organics (DRO)	<8.13	1000	1060	106	1090	109	70-135	3	20	mg/kg	07.05.19 10:09	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		75		80		70-135	%	07.05.19 10:09
o-Terphenyl	103		77		88		70-135	%	07.05.19 10:09

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

QC Summary 629720

LT Environmental, Inc.

JRU D12 CTB (2RP-5503)

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3094602 — Matrix: Soil — Date Prep: 07.05.19
Parent Sample Id: 629707-001 — MS Sample Id: 629707-001 S — MSD Sample Id: 629707-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	9.05	999	1160	115	1210	120	70-135	4	20	mg/kg	07.05.19 11:25	
Diesel Range Organics (DRO)	8.81	999	1230	122	1280	127	70-135	4	20	mg/kg	07.05.19 11:25	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		105		70-135	%	07.05.19 11:25
o-Terphenyl	108		111		70-135	%	07.05.19 11:25

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3094957 — Matrix: Solid — Date Prep: 07.08.19
MB Sample Id: 7681583-1-BLK — LCS Sample Id: 7681583-1-BKS — LCSD Sample Id: 7681583-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0843	85	0.0920	92	70-130	9	35	mg/kg	07.09.19 04:01	
Toluene	<0.00199	0.0994	0.0821	83	0.0861	86	70-130	5	35	mg/kg	07.09.19 04:01	
Ethylbenzene	<0.00199	0.0994	0.0901	91	0.0953	95	70-130	6	35	mg/kg	07.09.19 04:01	
m,p-Xylenes	<0.00398	0.199	0.180	90	0.190	95	70-130	5	35	mg/kg	07.09.19 04:01	
o-Xylene	<0.00199	0.0994	0.0856	86	0.0913	91	70-130	6	35	mg/kg	07.09.19 04:01	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		93		96		70-130	%	07.09.19 04:01
4-Bromofluorobenzene	100		103		109		70-130	%	07.09.19 04:01

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3094957 — Matrix: Soil — Date Prep: 07.08.19
Parent Sample Id: 629707-001 — MS Sample Id: 629707-001 S — MSD Sample Id: 629707-001 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	0.0998	0.0779	78	0.0746	74	70-130	4	35	mg/kg	07.09.19 04:45	
Toluene	<0.00200	0.0998	0.0757	76	0.0732	72	70-130	3	35	mg/kg	07.09.19 04:45	
Ethylbenzene	<0.00200	0.0998	0.0815	82	0.0791	78	70-130	3	35	mg/kg	07.09.19 04:45	
m,p-Xylenes	<0.00399	0.200	0.163	82	0.157	78	70-130	4	35	mg/kg	07.09.19 04:45	
o-Xylene	<0.00200	0.0998	0.0801	80	0.0748	74	70-130	7	35	mg/kg	07.09.19 04:45	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		99		70-130	%	07.09.19 04:45
4-Bromofluorobenzene	122		124		70-130	%	07.09.19 04:45

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

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: 629720

Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc.	Company Name:	XTO
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland TX. 79705	City, State ZIP:	Carlsbad, NM, 88220
Phone:	432. 236.3849	Email:	Slo@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 D12 CTB (2RP-5503)	Turn Around	
Project Number:	01291914J	Routine	☑
Project Location		Rush:	
Sampler's Name:	Spencer W	Due Date:	
PO #:		Quote #:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	5.2	Thermometer ID	TNM00
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Total Containers:	5

Preservative Codes

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

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

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	Pres. Code	TPH (EPA 8012)	BTEX (EPA 8021)	Chloride (EPA 300)	Sample Comments
	SS01	S	7/1/19	1145	6"	1		X	X	X	
	SS02	S	7/1/19	1205	6"	1		X	X	X	
	SS03	S	7/1/19	1220	6"	1		X	X	X	
	SS04	S	7/1/19	1240	6"	1		X	X	X	
	SS05	S	7/1/19	1300	6"	1		X	X	X	

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

Circle Method(s) and Metal(s) to be analyzed

TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		07/02/19 0805			
			4		
			6		

Revised Date 022619 Rev. 2019.1

Inter-Office Shipment

IOS Number **42708**

Date/Time: 07/02/19 10:55
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.: 775624086614

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
629720-001	S	SS01	07/01/19 11:45	E300_CL	Chloride by EPA 300	07/09/19	12/28/19	JKR	CL	
629720-001	S	SS01	07/01/19 11:45	SW8021B	BTEX by EPA 8021B	07/09/19	07/15/19	JKR	BR4FBZ BZ BZME EBZ X	
629720-001	S	SS01	07/01/19 11:45	SW8015MOD_NM	TPH by SW8015 Mod	07/09/19	07/15/19	JKR	GRO-DRO PHCC10C28 PI	
629720-002	S	SS02	07/01/19 12:05	SW8021B	BTEX by EPA 8021B	07/09/19	07/15/19	JKR	BR4FBZ BZ BZME EBZ X	
629720-002	S	SS02	07/01/19 12:05	SW8015MOD_NM	TPH by SW8015 Mod	07/09/19	07/15/19	JKR	GRO-DRO PHCC10C28 PI	
629720-002	S	SS02	07/01/19 12:05	E300_CL	Chloride by EPA 300	07/09/19	12/28/19	JKR	CL	
629720-003	S	SS03	07/01/19 12:20	SW8015MOD_NM	TPH by SW8015 Mod	07/09/19	07/15/19	JKR	GRO-DRO PHCC10C28 PI	
629720-003	S	SS03	07/01/19 12:20	SW8021B	BTEX by EPA 8021B	07/09/19	07/15/19	JKR	BR4FBZ BZ BZME EBZ X	
629720-003	S	SS03	07/01/19 12:20	E300_CL	Chloride by EPA 300	07/09/19	12/28/19	JKR	CL	
629720-004	S	SS04	07/01/19 12:40	SW8015MOD_NM	TPH by SW8015 Mod	07/09/19	07/15/19	JKR	GRO-DRO PHCC10C28 PI	
629720-004	S	SS04	07/01/19 12:40	E300_CL	Chloride by EPA 300	07/09/19	12/28/19	JKR	CL	
629720-004	S	SS04	07/01/19 12:40	SW8021B	BTEX by EPA 8021B	07/09/19	07/15/19	JKR	BR4FBZ BZ BZME EBZ X	
629720-005	S	SS05	07/01/19 13:00	SW8021B	BTEX by EPA 8021B	07/09/19	07/15/19	JKR	BR4FBZ BZ BZME EBZ X	
629720-005	S	SS05	07/01/19 13:00	SW8015MOD_NM	TPH by SW8015 Mod	07/09/19	07/15/19	JKR	GRO-DRO PHCC10C28 PI	
629720-005	S	SS05	07/01/19 13:00	E300_CL	Chloride by EPA 300	07/09/19	12/28/19	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 07/02/2019

Received By: Brianna Teel

Date Received: 07/03/2019 11:28

Cooler Temperature: 0.4

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 42708

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : R8

Sent By: Elizabeth McClellan **Date Sent:** 07/02/2019 10:55 AM

Received By: Brianna Teel **Date Received:** 07/03/2019 11:28 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	.4	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: Brianna Teel Date: 07/03/2019

Brianna Teel

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 07/02/2019 08:05:00 AM

Work Order #: 629720

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	5.2	
#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)?	**Yes**	Subbed to Xenco Midland.
#18 Water VOC samples have zero headspace?	**N/A**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 07/02/2019

Checklist reviewed by: Jessica Kramer Date: 07/03/2019

Jessica Kramer

Analytical Report 639323

for

LT Environmental, Inc.

Project Manager: Dan Moir

James Ranch Unit D12 Central Tank Battery

012919141

15-OCT-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

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

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

15-OCT-19

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

Reference: XENCO Report No(s): **639323**
James Ranch Unit D12 Central Tank Battery
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 639323. 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. 639323 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 639323

LT Environmental, Inc., Arvada, CO

James Ranch Unit D12 Central Tank Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	10-07-19 10:02	4 ft	639323-001
SW01	S	10-07-19 10:19	0 - 4 ft	639323-002
SW02	S	10-07-19 10:30	0 - 4 ft	639323-003
FS02	S	10-07-19 10:47	4 ft	639323-004
SW03	S	10-07-19 10:42	0 - 4 ft	639323-005

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: James Ranch Unit D12 Central Tank Battery

Project ID: *012919141*
Work Order Number(s): *639323*

Report Date: *15-OCT-19*
Date Received: *10/08/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3103852 BTEX by EPA 8021B

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

Certificate of Analysis Summary 639323

LT Environmental, Inc., Arvada, CO

Project Name: James Ranch Unit D12 Central Tank Battery

Project Id: 012919141
Contact: Dan Moir
Project Location:

Date Received in Lab: Tue Oct-08-19 11:07 am
Report Date: 15-OCT-19
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	639323-001		639323-002		639323-003		639323-004		639323-005	
	Field Id:	FS01		SW01		SW02		FS02		SW03	
	Depth:	4- ft		0-4 ft		0-4 ft		4- ft		0-4 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-07-19 10:02		Oct-07-19 10:19		Oct-07-19 10:30		Oct-07-19 10:47		Oct-07-19 10:42	
BTEX by EPA 8021B SUB: T104704219-19-21	***Extracted:***	Oct-09-19 09:30		Oct-09-19 09:30		Oct-09-19 09:30		Oct-09-19 09:30		Oct-09-19 09:30	
	Analyzed:	Oct-09-19 21:17		Oct-09-19 21:42		Oct-09-19 22:06		Oct-09-19 22:30		Oct-09-19 22:54	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.0197	0.0197	<0.0200	0.0200	<0.0187	0.0187	<0.0196	0.0196	<0.0195	0.0195
Toluene		<0.0197	0.0197	<0.0200	0.0200	<0.0187	0.0187	<0.0196	0.0196	<0.0195	0.0195
Ethylbenzene		<0.0197	0.0197	<0.0200	0.0200	<0.0187	0.0187	<0.0196	0.0196	<0.0195	0.0195
m,p-Xylenes		<0.0394	0.0394	<0.0400	0.0400	<0.0374	0.0374	<0.0392	0.0392	<0.0390	0.0390
o-Xylene		<0.0197	0.0197	0.0200	0.0200	<0.0187	0.0187	<0.0196	0.0196	<0.0195	0.0195
Total Xylenes		<0.0197	0.0197	0.0200	0.0200	<0.0187	0.0187	<0.0196	0.0196	<0.0195	0.0195
Total BTEX		<0.0197	0.0197	0.0200	0.0200	<0.0187	0.0187	<0.0196	0.0196	<0.0195	0.0195
Chloride by EPA 300 SUB: T104704215-19-30	***Extracted:***	Oct-10-19 13:00		Oct-10-19 13:00		Oct-10-19 13:00		Oct-10-19 13:00		Oct-10-19 13:00	
	Analyzed:	Oct-10-19 15:32		Oct-10-19 16:09		Oct-10-19 16:47		Oct-10-19 16:59		Oct-10-19 17:12	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		65.0	10.0	66.4	9.84	142	10.0	46.1	9.94	99.5	9.92
TPH by SW8015 Mod SUB: T104704215-19-30	***Extracted:***	Oct-09-19 15:18		Oct-09-19 15:21		Oct-09-19 15:24		Oct-09-19 15:27		Oct-09-19 15:30	
	Analyzed:	Oct-12-19 02:01		Oct-12-19 02:19		Oct-12-19 02:38		Oct-12-19 02:57		Oct-12-19 03:16	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<49.9	49.9	<50.2	50.2	<50.0	50.0	<50.0	50.0	<49.7	49.7
Diesel Range Organics (DRO)		1060	49.9	1230	50.2	1830	50.0	81.6	50.0	<49.7	49.7
Motor Oil Range Hydrocarbons (MRO)		162	49.9	159	50.2	263	50.0	<50.0	50.0	<49.7	49.7
Total GRO-DRO		1060	49.9	1230	50.2	1830	50.0	81.6	50.0	<49.7	49.7
Total TPH		1220	49.9	1390	50.2	2090	50.0	81.6	50.0	<49.7	49.7

Jessica Kramer
Project Assistant

Certificate of Analytical Results 639323

LT Environmental, Inc., Arvada, CO

James Ranch Unit D12 Central Tank Battery

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	10.08.19 11.07
Lab Sample Id:	639323-001	Date Collected:	10.07.19 10.02	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	JYM			% Moisture:	
Analyst:	JYM	Date Prep:	10.10.19 13.00	Basis:	Wet Weight
Seq Number:	3103941			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**65.0**	10.0	mg/kg	10.10.19 15.32		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DRU			% Moisture:	
Analyst:	ISU	Date Prep:	10.09.19 15.18	Basis:	Wet Weight
Seq Number:	3104165			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.12.19 02.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	**1060**	49.9	mg/kg	10.12.19 02.01		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**162**	49.9	mg/kg	10.12.19 02.01		1
Total GRO-DRO	PHC628	**1060**	49.9	mg/kg	10.12.19 02.01		1
Total TPH	PHC635	**1220**	49.9	mg/kg	10.12.19 02.01		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	10.12.19 02.01	
o-Terphenyl	84-15-1	77	%	70-135	10.12.19 02.01	

Certificate of Analytical Results 639323

LT Environmental, Inc., Arvada, CO

James Ranch Unit D12 Central Tank Battery

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	10.08.19 11.07
Lab Sample Id:	639323-001	Date Collected:	10.07.19 10.02	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	10.09.19 09.30	Basis:	Wet Weight
Seq Number:	3103852			SUB:	T104704219-19-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0197	0.0197	mg/kg	10.09.19 21.17	U	1
Toluene	108-88-3	<0.0197	0.0197	mg/kg	10.09.19 21.17	U	1
Ethylbenzene	100-41-4	<0.0197	0.0197	mg/kg	10.09.19 21.17	U	1
m,p-Xylenes	179601-23-1	<0.0394	0.0394	mg/kg	10.09.19 21.17	U	1
o-Xylene	95-47-6	<0.0197	0.0197	mg/kg	10.09.19 21.17	U	1
Total Xylenes	1330-20-7	<0.0197	0.0197	mg/kg	10.09.19 21.17	U	1
Total BTEX		<0.0197	0.0197	mg/kg	10.09.19 21.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	77	%	68-120	10.09.19 21.17	
a,a,a-Trifluorotoluene	98-08-8	87	%	71-121	10.09.19 21.17	

Certificate of Analytical Results 639323

LT Environmental, Inc., Arvada, CO

James Ranch Unit D12 Central Tank Battery

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	10.08.19 11.07
Lab Sample Id:	639323-002	Date Collected:	10.07.19 10.19	Sample Depth:	0 - 4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	JYM			% Moisture:	
Analyst:	JYM	Date Prep:	10.10.19 13.00	Basis:	Wet Weight
Seq Number:	3103941			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**66.4**	9.84	mg/kg	10.10.19 16.09		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DRU			% Moisture:	
Analyst:	ISU	Date Prep:	10.09.19 15.21	Basis:	Wet Weight
Seq Number:	3104165			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.12.19 02.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	**1230**	50.2	mg/kg	10.12.19 02.19		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**159**	50.2	mg/kg	10.12.19 02.19		1
Total GRO-DRO	PHC628	**1230**	50.2	mg/kg	10.12.19 02.19		1
Total TPH	PHC635	**1390**	50.2	mg/kg	10.12.19 02.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	10.12.19 02.19	
o-Terphenyl	84-15-1	88	%	70-135	10.12.19 02.19	

Certificate of Analytical Results 639323

LT Environmental, Inc., Arvada, CO

James Ranch Unit D12 Central Tank Battery

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	10.08.19 11.07
Lab Sample Id:	639323-002	Date Collected:	10.07.19 10.19	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	10.09.19 09.30	Basis:	Wet Weight
Seq Number:	3103852			SUB:	T104704219-19-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0200	0.0200	mg/kg	10.09.19 21.42	U	1
Toluene	108-88-3	<0.0200	0.0200	mg/kg	10.09.19 21.42	U	1
Ethylbenzene	100-41-4	<0.0200	0.0200	mg/kg	10.09.19 21.42	U	1
m,p-Xylenes	179601-23-1	<0.0400	0.0400	mg/kg	10.09.19 21.42	U	1
o-Xylene	95-47-6	**0.0200**	0.0200	mg/kg	10.09.19 21.42		1
Total Xylenes	1330-20-7	**0.0200**	0.0200	mg/kg	10.09.19 21.42		1
Total BTEX		**0.0200**	0.0200	mg/kg	10.09.19 21.42		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	77	%	68-120	10.09.19 21.42	
a,a,a-Trifluorotoluene	98-08-8	78	%	71-121	10.09.19 21.42	

Certificate of Analytical Results 639323

LT Environmental, Inc., Arvada, CO

James Ranch Unit D12 Central Tank Battery

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	10.08.19 11.07
Lab Sample Id:	639323-003	Date Collected:	10.07.19 10.30	Sample Depth:	0 - 4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	JYM			% Moisture:	
Analyst:	JYM	Date Prep:	10.10.19 13.00	Basis:	Wet Weight
Seq Number:	3103941			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**142**	10.0	mg/kg	10.10.19 16.47		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DRU			% Moisture:	
Analyst:	ISU	Date Prep:	10.09.19 15.24	Basis:	Wet Weight
Seq Number:	3104165			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.12.19 02.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	**1830**	50.0	mg/kg	10.12.19 02.38		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**263**	50.0	mg/kg	10.12.19 02.38		1
Total GRO-DRO	PHC628	**1830**	50.0	mg/kg	10.12.19 02.38		1
Total TPH	PHC635	**2090**	50.0	mg/kg	10.12.19 02.38		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	10.12.19 02.38	
o-Terphenyl	84-15-1	99	%	70-135	10.12.19 02.38	

Certificate of Analytical Results 639323

LT Environmental, Inc., Arvada, CO

James Ranch Unit D12 Central Tank Battery

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	10.08.19 11.07
Lab Sample Id:	639323-003	Date Collected:	10.07.19 10.30	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	10.09.19 09.30	Basis:	Wet Weight
Seq Number:	3103852			SUB:	T104704219-19-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0187	0.0187	mg/kg	10.09.19 22.06	U	1
Toluene	108-88-3	<0.0187	0.0187	mg/kg	10.09.19 22.06	U	1
Ethylbenzene	100-41-4	<0.0187	0.0187	mg/kg	10.09.19 22.06	U	1
m,p-Xylenes	179601-23-1	<0.0374	0.0374	mg/kg	10.09.19 22.06	U	1
o-Xylene	95-47-6	<0.0187	0.0187	mg/kg	10.09.19 22.06	U	1
Total Xylenes	1330-20-7	<0.0187	0.0187	mg/kg	10.09.19 22.06	U	1
Total BTEX		<0.0187	0.0187	mg/kg	10.09.19 22.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	76	%	68-120	10.09.19 22.06	
a,a,a-Trifluorotoluene	98-08-8	88	%	71-121	10.09.19 22.06	

Certificate of Analytical Results 639323

LT Environmental, Inc., Arvada, CO

James Ranch Unit D12 Central Tank Battery

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	10.08.19 11.07
Lab Sample Id:	639323-004	Date Collected:	10.07.19 10.47	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	JYM			% Moisture:	
Analyst:	JYM	Date Prep:	10.10.19 13.00	Basis:	Wet Weight
Seq Number:	3103941			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**46.1**	9.94	mg/kg	10.10.19 16.59		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DRU			% Moisture:	
Analyst:	ISU	Date Prep:	10.09.19 15.27	Basis:	Wet Weight
Seq Number:	3104165			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.12.19 02.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	**81.6**	50.0	mg/kg	10.12.19 02.57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.12.19 02.57	U	1
Total GRO-DRO	PHC628	**81.6**	50.0	mg/kg	10.12.19 02.57		1
Total TPH	PHC635	**81.6**	50.0	mg/kg	10.12.19 02.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.12.19 02.57	
o-Terphenyl	84-15-1	92	%	70-135	10.12.19 02.57	

Certificate of Analytical Results 639323

LT Environmental, Inc., Arvada, CO

James Ranch Unit D12 Central Tank Battery

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	10.08.19 11.07
Lab Sample Id:	639323-004	Date Collected:	10.07.19 10.47	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	10.09.19 09.30	Basis:	Wet Weight
Seq Number:	3103852			SUB:	T104704219-19-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0196	0.0196	mg/kg	10.09.19 22.30	U	1
Toluene	108-88-3	<0.0196	0.0196	mg/kg	10.09.19 22.30	U	1
Ethylbenzene	100-41-4	<0.0196	0.0196	mg/kg	10.09.19 22.30	U	1
m,p-Xylenes	179601-23-1	<0.0392	0.0392	mg/kg	10.09.19 22.30	U	1
o-Xylene	95-47-6	<0.0196	0.0196	mg/kg	10.09.19 22.30	U	1
Total Xylenes	1330-20-7	<0.0196	0.0196	mg/kg	10.09.19 22.30	U	1
Total BTEX		<0.0196	0.0196	mg/kg	10.09.19 22.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	68-120	10.09.19 22.30	
a,a,a-Trifluorotoluene	98-08-8	111	%	71-121	10.09.19 22.30	

Certificate of Analytical Results 639323

LT Environmental, Inc., Arvada, CO

James Ranch Unit D12 Central Tank Battery

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	10.08.19 11.07
Lab Sample Id:	639323-005	Date Collected:	10.07.19 10.42	Sample Depth:	0 - 4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	JYM			% Moisture:	
Analyst:	JYM	Date Prep:	10.10.19 13.00	Basis:	Wet Weight
Seq Number:	3103941			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**99.5**	9.92	mg/kg	10.10.19 17.12		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DRU			% Moisture:	
Analyst:	ISU	Date Prep:	10.09.19 15.30	Basis:	Wet Weight
Seq Number:	3104165			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.7	49.7	mg/kg	10.12.19 03.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.7	49.7	mg/kg	10.12.19 03.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.7	49.7	mg/kg	10.12.19 03.16	U	1
Total GRO-DRO	PHC628	<49.7	49.7	mg/kg	10.12.19 03.16	U	1
Total TPH	PHC635	<49.7	49.7	mg/kg	10.12.19 03.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	10.12.19 03.16	
o-Terphenyl	84-15-1	108	%	70-135	10.12.19 03.16	

Certificate of Analytical Results 639323

LT Environmental, Inc., Arvada, CO

James Ranch Unit D12 Central Tank Battery

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	10.08.19 11.07
Lab Sample Id:	639323-005	Date Collected:	10.07.19 10.42	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	10.09.19 09.30	Basis:	Wet Weight
Seq Number:	3103852			SUB:	T104704219-19-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0195	0.0195	mg/kg	10.09.19 22.54	U	1
Toluene	108-88-3	<0.0195	0.0195	mg/kg	10.09.19 22.54	U	1
Ethylbenzene	100-41-4	<0.0195	0.0195	mg/kg	10.09.19 22.54	U	1
m,p-Xylenes	179601-23-1	<0.0390	0.0390	mg/kg	10.09.19 22.54	U	1
o-Xylene	95-47-6	<0.0195	0.0195	mg/kg	10.09.19 22.54	U	1
Total Xylenes	1330-20-7	<0.0195	0.0195	mg/kg	10.09.19 22.54	U	1
Total BTEX		<0.0195	0.0195	mg/kg	10.09.19 22.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	90	%	68-120	10.09.19 22.54	
a,a,a-Trifluorotoluene	98-08-8	104	%	71-121	10.09.19 22.54	

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 639323

LT Environmental, Inc.

James Ranch Unit D12 Central Tank Battery

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3103941 — Matrix: Solid — Date Prep: 10.10.19
MB Sample Id: 7687856-1-BLK — LCS Sample Id: 7687856-1-BKS — LCSD Sample Id: 7687856-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	100	103	103	102	102	80-120	1	20	mg/kg	10.10.19 10:44	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3103941 — Matrix: Soil — Date Prep: 10.10.19
Parent Sample Id: 639323-001 — MS Sample Id: 639323-001 S — MSD Sample Id: 639323-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	65.0	99.8	158	93	159	94	80-120	1	20	mg/kg	10.10.19 15:44	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3103941 — Matrix: Soil — Date Prep: 10.10.19
Parent Sample Id: 639323-002 — MS Sample Id: 639323-002 S — MSD Sample Id: 639323-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	66.4	99.4	156	90	157	91	80-120	1	20	mg/kg	10.10.19 16:22	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3104165 — Matrix: Solid — Date Prep: 10.09.19
MB Sample Id: 7687800-1-BLK — LCS Sample Id: 7687800-1-BKS — LCSD Sample Id: 7687800-1-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)	<10.0	1000	1230	123	1240	124	70-135	1	35	mg/kg	10.11.19 19:10	
Diesel Range Organics (DRO)	<10.0	1000	1110	111	1120	112	70-135	1	35	mg/kg	10.11.19 19:10	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		105		106		70-135	%	10.11.19 19:10
o-Terphenyl	101		95		101		70-135	%	10.11.19 19:10

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3104165 — Matrix: Solid — Date Prep: 10.09.19
MB Sample Id: 7687800-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.11.19 18:52	

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 639323

LT Environmental, Inc.

James Ranch Unit D12 Central Tank Battery

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3104165 — Matrix: Soil — Date Prep: 10.09.19
Parent Sample Id: 639140-001 — MS Sample Id: 639140-001 S — MSD Sample Id: 639140-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	11.9	999	1230	122	1180	117	70-135	4	35	mg/kg	10.11.19 20:06	
Diesel Range Organics (DRO)	792	999	2120	133	1950	116	70-135	8	35	mg/kg	10.11.19 20:06	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		101		70-135	%	10.11.19 20:06
o-Terphenyl	88		88		70-135	%	10.11.19 20:06

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3103852 — Matrix: Solid — Date Prep: 10.09.19
MB Sample Id: 7687753-1-BLK — LCS Sample Id: 7687753-1-BKS — LCSD Sample Id: 7687753-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0200	2.00	1.96	98	1.89	95	55-120	4	20	mg/kg	10.09.19 17:15	
Toluene	<0.0200	2.00	1.95	98	1.87	94	77-120	4	20	mg/kg	10.09.19 17:15	
Ethylbenzene	<0.0200	2.00	2.06	103	1.98	99	77-120	4	20	mg/kg	10.09.19 17:15	
m,p-Xylenes	<0.0400	4.00	4.10	103	3.94	99	78-120	4	20	mg/kg	10.09.19 17:15	
o-Xylene	<0.0200	2.00	2.05	103	1.97	99	78-120	4	20	mg/kg	10.09.19 17:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	84		86		89		68-120	%	10.09.19 17:15
a,a,a-Trifluorotoluene	95		93		97		71-121	%	10.09.19 17:15

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3103852 — Matrix: Soil — Date Prep: 10.09.19
Parent Sample Id: 639321-001 — MS Sample Id: 639321-001 S — MSD Sample Id: 639321-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0192	1.92	1.67	87	1.60	89	54-120	4	25	mg/kg	10.09.19 19:40	
Toluene	<0.0192	1.92	1.65	86	1.62	90	57-120	2	25	mg/kg	10.09.19 19:40	
Ethylbenzene	<0.0192	1.92	1.71	89	1.70	94	58-131	1	25	mg/kg	10.09.19 19:40	
m,p-Xylenes	<0.0383	3.83	3.32	87	3.37	94	62-124	1	25	mg/kg	10.09.19 19:40	
o-Xylene	<0.0192	1.92	1.66	86	1.67	93	62-124	1	25	mg/kg	10.09.19 19:40	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	74		82		68-120	%	10.09.19 19:40
a,a,a-Trifluorotoluene	92		96		71-121	%	10.09.19 19:40

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

Chain of Custody

Work Order No: 639323

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

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian Office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Greene St
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849 Email:		fsmith@ltenv.com, dmoir@ltenv.com

Work Order Comments

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

Project Name:	James Ranch Unit D12 Central Tank Battery	Turn Around	
Project Number:	012919141	Routine	✓
P.O. Number:	2RP-5503	Rush:	
Sampler's Name:	Fatima Smith	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	1.4	Thermometer ID	T-NM-007
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	5

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
FS01	S	10/7/19	1002	4'	1	X	X	X
SW01	S	10/7/19	1019	0-4'	1	X	X	X
SW02	S	10/7/19	1030	0-4'	1	X	X	X
FS02	S	10/7/19	1047	4'	1	X	X	X
SW03	S	10/7/19	1042	0-4'	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
		10/8/19 11:07	2		
			4		
			6		

Revised Date 051418 Rev. 2018.1

Inter-Office Shipment

IOS Number **49614**

Date/Time: 10/08/19 12:57
Lab# From: **Carlsbad**
Lab# To: **Lubbock**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.: FEDEX

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
639323-001	S	FS01	10/07/19 10:02	SW8021B	BTEX by EPA 8021B	10/14/19	10/21/19	JKR	BR4FBZ BZ BZME EBZ X	
639323-002	S	SW01	10/07/19 10:19	SW8021B	BTEX by EPA 8021B	10/14/19	10/21/19	JKR	BR4FBZ BZ BZME EBZ X	
639323-003	S	SW02	10/07/19 10:30	SW8021B	BTEX by EPA 8021B	10/14/19	10/21/19	JKR	BR4FBZ BZ BZME EBZ X	
639323-004	S	FS02	10/07/19 10:47	SW8021B	BTEX by EPA 8021B	10/14/19	10/21/19	JKR	BR4FBZ BZ BZME EBZ X	
639323-005	S	SW03	10/07/19 10:42	SW8021B	BTEX by EPA 8021B	10/14/19	10/21/19	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan
Date Relinquished: 10/08/2019

Received By: Ashley Derstine
Date Received: 10/09/2019 09:45
Cooler Temperature: 2.9

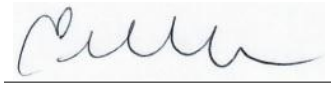
Inter-Office Shipment

IOS Number : 49615

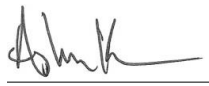
Date/Time:	10.08.2019	Created by:	Elizabeth Mcclellan	Please send report to:	Jessica Kramer
Lab# From:	**Carlsbad**	Delivery Priority:		Address:	1089 N Canal Street
Lab# To:	**Houston**	Air Bill No.:	776599755226	E-Mail:	jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
639323-001	S	FS01	10.07.2019 10:02	SW8015MOD_NM	TPH by SW8015 Mod	10.14.2019	10.21.2019	JKR	GRO-DRO PHCC10C28	
639323-001	S	FS01	10.07.2019 10:02	E300_CL	Chloride by EPA 300	10.14.2019	04.04.2020	JKR	CL	
639323-002	S	SW01	10.07.2019 10:19	SW8015MOD_NM	TPH by SW8015 Mod	10.14.2019	10.21.2019	JKR	GRO-DRO PHCC10C28	
639323-002	S	SW01	10.07.2019 10:19	E300_CL	Chloride by EPA 300	10.14.2019	04.04.2020	JKR	CL	
639323-003	S	SW02	10.07.2019 10:30	SW8015MOD_NM	TPH by SW8015 Mod	10.14.2019	10.21.2019	JKR	GRO-DRO PHCC10C28	
639323-003	S	SW02	10.07.2019 10:30	E300_CL	Chloride by EPA 300	10.14.2019	04.04.2020	JKR	CL	
639323-004	S	FS02	10.07.2019 10:47	E300_CL	Chloride by EPA 300	10.14.2019	04.04.2020	JKR	CL	
639323-004	S	FS02	10.07.2019 10:47	SW8015MOD_NM	TPH by SW8015 Mod	10.14.2019	10.21.2019	JKR	GRO-DRO PHCC10C28	
639323-005	S	SW03	10.07.2019 10:42	E300_CL	Chloride by EPA 300	10.14.2019	04.04.2020	JKR	CL	
639323-005	S	SW03	10.07.2019 10:42	SW8015MOD_NM	TPH by SW8015 Mod	10.14.2019	10.21.2019	JKR	GRO-DRO PHCC10C28	

Inter Office Shipment or Sample Comments:

Relinquished By: 
Elizabeth McClellan

Date Relinquished: 10.08.2019

Received By: 
Ashly Kowalski

Date Received: 10.09.2019

Cooler Temperature: 1.5

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Lubbock

IOS #: 49614

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used :

Sent By: Elizabeth McClellan **Date Sent:** 10/08/2019 12:57 PM

Received By: Ashley Derstine **Date Received:** 10/09/2019 09:45 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2.9	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: _____ Date: 10/09/2019

Ashley Derstine

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 49615

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : HOU-068

Sent By: Elizabeth McClellan **Date Sent:** 10.08.2019 12.57 PM

Received By: Ashly Kowalski **Date Received:** 10.09.2019 09.30 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	1.5	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 *Custody Seals Signed and dated for Containers/coolers	**N/A**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: _____ Date: 10.09.2019

Ashly Kowalski

Analytical Report 643521

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU D12 CTB

012919141

19-NOV-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

19-NOV-19

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

Reference: XENCO Report No(s): **643521**
JRU D12 CTB
Project Address: Eddy County

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) 643521. 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. 643521 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 643521

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01A	S	11-18-19 11:11	4.5 ft	643521-001

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU D12 CTB

Project ID: *012919141*
Work Order Number(s): *643521*

Report Date: *19-NOV-19*
Date Received: *11/18/2019*

Sample receipt non conformances and comments:

Corrected project name to read JRU D12 CTB. New version generated. JK 11/19/19

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3107843 BTEX by EPA 8021B

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

Certificate of Analysis Summary 643521

LT Environmental, Inc., Arvada, CO

Project Name: JRU D12 CTB

Project Id: 012919141
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Mon Nov-18-19 01:15 pm
Report Date: 19-NOV-19
Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	643521-001					
	Field Id:	FS01A					
	Depth:	4.5- ft					
	Matrix:	SOIL					
	Sampled:	Nov-18-19 11:11					
BTEX by EPA 8021B	***Extracted:***	Nov-18-19 15:11					
	Analyzed:	Nov-18-19 19:36					
	Units/RL:	mg/kg	RL				
Benzene		<0.000990	0.000990				
Toluene		<0.000990	0.000990				
Ethylbenzene		<0.000990	0.000990				
m,p-Xylenes		<0.00198	0.00198				
o-Xylene		<0.000990	0.000990				
Total Xylenes		<0.000990	0.000990				
Total BTEX		<0.000990	0.000990				
Chloride by EPA 300	***Extracted:***	Nov-18-19 15:11					
	Analyzed:	Nov-18-19 20:19					
	Units/RL:	mg/kg	RL				
Chloride		265	10.0				
TPH by SW8015 Mod	***Extracted:***	Nov-18-19 14:00					
	Analyzed:	Nov-18-19 16:11					
	Units/RL:	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<50.1	50.1				
Diesel Range Organics (DRO)		142	50.1				
Motor Oil Range Hydrocarbons (MRO)		<50.1	50.1				
Total GRO-DRO		142	50.1				
Total TPH		142	50.1				

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

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analytical Results 643521

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**FS01A**	Matrix:	Soil	Date Received:	11.18.19 13.15
Lab Sample Id:	643521-001	Date Collected:	11.18.19 11.11	Sample Depth:	4.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.18.19 15.11	Basis:	Wet Weight
Seq Number:	3107844				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**265**	10.0	mg/kg	11.18.19 20.19		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.18.19 14.00	Basis:	Wet Weight
Seq Number:	3107867				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.18.19 16.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	**142**	50.1	mg/kg	11.18.19 16.11		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.18.19 16.11	U	1
Total GRO-DRO	PHC628	**142**	50.1	mg/kg	11.18.19 16.11		1
Total TPH	PHC635	**142**	50.1	mg/kg	11.18.19 16.11		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	11.18.19 16.11	
o-Terphenyl	84-15-1	106	%	70-135	11.18.19 16.11	

Certificate of Analytical Results 643521

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**FS01A**	Matrix:	Soil	Date Received:	11.18.19 13.15
Lab Sample Id:	643521-001	Date Collected:	11.18.19 11.11	Sample Depth:	4.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.18.19 15.11	Basis:	Wet Weight
Seq Number:	3107843				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000990	0.000990	mg/kg	11.18.19 19.36	U	1
Toluene	108-88-3	<0.000990	0.000990	mg/kg	11.18.19 19.36	U	1
Ethylbenzene	100-41-4	<0.000990	0.000990	mg/kg	11.18.19 19.36	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.18.19 19.36	U	1
o-Xylene	95-47-6	<0.000990	0.000990	mg/kg	11.18.19 19.36	U	1
Total Xylenes	1330-20-7	<0.000990	0.000990	mg/kg	11.18.19 19.36	U	1
Total BTEX		<0.000990	0.000990	mg/kg	11.18.19 19.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96	%	70-130	11.18.19 19.36	
4-Bromofluorobenzene	460-00-4	105	%	70-130	11.18.19 19.36	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 643521

LT Environmental, Inc.

JRU D12 CTB

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3107844 — Matrix: Solid — Date Prep: 11.18.19
MB Sample Id: 7690574-1-BLK — LCS Sample Id: 7690574-1-BKS — LCSD Sample Id: 7690574-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	254	102	255	102	90-110	0	20	mg/kg	11.18.19 18:56	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3107844 — Matrix: Soil — Date Prep: 11.18.19
Parent Sample Id: 643519-001 — MS Sample Id: 643519-001 S — MSD Sample Id: 643519-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.3	200	215	100	219	102	90-110	2	20	mg/kg	11.18.19 19:14	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3107844 — Matrix: Soil — Date Prep: 11.18.19
Parent Sample Id: 643534-003 — MS Sample Id: 643534-003 S — MSD Sample Id: 643534-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7.27	200	209	101	209	101	90-110	0	20	mg/kg	11.18.19 20:48	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3107867 — Matrix: Solid — Date Prep: 11.18.19
MB Sample Id: 7690572-1-BLK — LCS Sample Id: 7690572-1-BKS — LCSD Sample Id: 7690572-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1060	106	1040	104	70-135	2	35	mg/kg	11.18.19 12:06	
Diesel Range Organics (DRO)	<50.0	1000	1210	121	1160	116	70-135	4	35	mg/kg	11.18.19 12:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		132		130		70-135	%	11.18.19 12:06
o-Terphenyl	111		127		119		70-135	%	11.18.19 12:06

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3107867 — Matrix: Solid — Date Prep: 11.18.19
MB Sample Id: 7690572-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.18.19 11:45	

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 643521

LT Environmental, Inc.

JRU D12 CTB

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3107867 — Matrix: Soil — Date Prep: 11.18.19
Parent Sample Id: 643519-001 — MS Sample Id: 643519-001 S — MSD Sample Id: 643519-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	842	84	956	96	70-135	13	35	mg/kg	11.18.19 14:48	
Diesel Range Organics (DRO)	<50.1	1000	1070	107	1100	110	70-135	3	35	mg/kg	11.18.19 14:48	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		123		70-135	%	11.18.19 14:48
o-Terphenyl	114		116		70-135	%	11.18.19 14:48

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3107843 — Matrix: Solid — Date Prep: 11.18.19
MB Sample Id: 7690575-1-BLK — LCS Sample Id: 7690575-1-BKS — LCSD Sample Id: 7690575-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.101	101	0.0963	96	70-130	5	35	mg/kg	11.18.19 15:39	
Toluene	<0.000500	0.100	0.0999	100	0.0953	95	70-130	5	35	mg/kg	11.18.19 15:39	
Ethylbenzene	<0.00100	0.100	0.0990	99	0.0946	95	71-129	5	35	mg/kg	11.18.19 15:39	
m,p-Xylenes	<0.00200	0.200	0.209	105	0.200	100	70-135	4	35	mg/kg	11.18.19 15:39	
o-Xylene	<0.00100	0.100	0.104	104	0.0987	99	71-133	5	35	mg/kg	11.18.19 15:39	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		103		102		70-130	%	11.18.19 15:39
4-Bromofluorobenzene	100		107		107		70-130	%	11.18.19 15:39

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3107843 — Matrix: Soil — Date Prep: 11.18.19
Parent Sample Id: 643519-001 — MS Sample Id: 643519-001 S — MSD Sample Id: 643519-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00101	0.101	0.107	106	0.0946	95	70-130	12	35	mg/kg	11.18.19 16:17	
Toluene	<0.000505	0.101	0.105	104	0.0921	92	70-130	13	35	mg/kg	11.18.19 16:17	
Ethylbenzene	<0.00101	0.101	0.103	102	0.0898	90	71-129	14	35	mg/kg	11.18.19 16:17	
m,p-Xylenes	<0.00202	0.202	0.218	108	0.188	94	70-135	15	35	mg/kg	11.18.19 16:17	
o-Xylene	<0.00101	0.101	0.109	108	0.0936	94	71-133	15	35	mg/kg	11.18.19 16:17	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		106		70-130	%	11.18.19 16:17
4-Bromofluorobenzene	113		113		70-130	%	11.18.19 16:17

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

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: 443521

www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, Tx 79705	City, State ZIP:	
Phone:	(432) 236-3849	Email:	wmather@ltenv.com, dmoir@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 DI4 CTB	Turn Around	
Project Number:	12919141	Routine ☐	
P.O. Number:	Eddy County	Rush: 24hr	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	1.4	Thermometer ID		
Received Intact:	(Yes) No	T-NM-007		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes (No) N/A	Total Containers:	1	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
FS01A	s	11/18/2019	11:11	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

~~discrete~~ composite

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			11/18/19 13:15	2			
3				4			
5				6			

Revised Date 051418 Rev. 2018.1

Analytical Report 651046

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU D12 CTB

012919141

03-FEB-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

03-FEB-20

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

Reference: XENCO Report No(s): **651046**
JRU D12 CTB
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 651046. 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. 651046 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 651046

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS08	S	01-30-20 14:25	0.5 ft	651046-001
SS09	S	01-30-20 14:30	0.5 ft	651046-002
SS10	S	01-30-20 14:35	0.5 ft	651046-003

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU D12 CTB

Project ID: *012919141*
Work Order Number(s): *651046*

Report Date: *03-FEB-20*
Date Received: *01/31/2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3115251 BTEX by EPA 8021B

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

Certificate of Analysis Summary 651046

LT Environmental, Inc., Arvada, CO

Project Name: JRU D12 CTB

Project Id: 012919141
Contact: Dan Moir
Project Location:

Date Received in Lab: Fri Jan-31-20 04:03 pm
Report Date: 03-FEB-20
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	651046-001		651046-002		651046-003				
	Field Id:	SS08		SS09		SS10				
	Depth:	0.5- ft		0.5- ft		0.5- ft				
	Matrix:	SOIL		SOIL		SOIL				
	Sampled:	Jan-30-20 14:25		Jan-30-20 14:30		Jan-30-20 14:35				
BTEX by EPA 8021B	***Extracted:***	Jan-31-20 20:00		Jan-31-20 20:00		Jan-31-20 20:00				
	Analyzed:	Feb-01-20 02:52		Feb-01-20 03:12		Feb-01-20 03:33				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Benzene		<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200			
Toluene		<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200			
Ethylbenzene		0.00507	0.00202	<0.00200	0.00200	0.00345	0.00200			
m,p-Xylenes		0.0134	0.00403	0.00866	0.00401	0.00618	0.00400			
o-Xylene		0.0126	0.00202	0.00210	0.00200	0.00443	0.00200			
Total Xylenes		0.0260	0.00202	0.0108	0.00200	0.0106	0.00200			
Total BTEX		0.0311	0.00202	0.0108	0.00200	0.0141	0.00200			
Chloride by EPA 300	***Extracted:***	Jan-31-20 18:00		Jan-31-20 18:00		Jan-31-20 18:00				
	Analyzed:	Jan-31-20 22:44		Jan-31-20 22:50		Jan-31-20 22:56				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Chloride		41.6	10.1	144	9.98	27.8	9.96			
TPH by SW8015 Mod	***Extracted:***	Jan-31-20 17:00		Jan-31-20 17:00		Jan-31-20 17:00				
	Analyzed:	Feb-03-20 13:02		Feb-03-20 13:02		Jan-31-20 23:44				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Gasoline Range Hydrocarbons (GRO)		372	251	<251	251	93.5	50.2			
Diesel Range Organics (DRO)		13800	251	8170	251	4940	50.2			
Motor Oil Range Hydrocarbons (MRO)		929	251	627	251	492	50.2			
Total GRO-DRO		14200	251	8170	251	5030	50.2			
Total TPH		15100	251	8800	251	5530	50.2			

Jessica Kramer
Project Assistant

Certificate of Analytical Results 651046

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**SS08**	Matrix:	Soil	Date Received:	01.31.20 16.03
Lab Sample Id:	651046-001	Date Collected:	01.30.20 14.25	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.31.20 18.00	Basis:	Wet Weight
Seq Number:	3115294				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**41.6**	10.1	mg/kg	01.31.20 22.44		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	01.31.20 17.00	Basis:	Wet Weight
Seq Number:	3115292				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**372**	251	mg/kg	02.03.20 13.02		5
Diesel Range Organics (DRO)	C10C28DRO	**13800**	251	mg/kg	02.03.20 13.02		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**929**	251	mg/kg	02.03.20 13.02		5
Total GRO-DRO	PHC628	**14200**	251	mg/kg	02.03.20 13.02		5
Total TPH	PHC635	**15100**	251	mg/kg	02.03.20 13.02		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	02.03.20 13.02	
o-Terphenyl	84-15-1	116	%	70-135	02.03.20 13.02	

Certificate of Analytical Results 651046

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**SS08**	Matrix:	Soil	Date Received:	01.31.20 16.03
Lab Sample Id:	651046-001	Date Collected:	01.30.20 14.25	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.31.20 20.00	Basis:	Wet Weight
Seq Number:	3115251				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.01.20 02.52	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.01.20 02.52	U	1
Ethylbenzene	100-41-4	**0.00507**	0.00202	mg/kg	02.01.20 02.52		1
m,p-Xylenes	179601-23-1	**0.0134**	0.00403	mg/kg	02.01.20 02.52		1
o-Xylene	95-47-6	**0.0126**	0.00202	mg/kg	02.01.20 02.52		1
Total Xylenes	1330-20-7	**0.0260**	0.00202	mg/kg	02.01.20 02.52		1
Total BTEX		**0.0311**	0.00202	mg/kg	02.01.20 02.52		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	02.01.20 02.52	
1,4-Difluorobenzene	540-36-3	103	%	70-130	02.01.20 02.52	

Certificate of Analytical Results 651046

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**SS09**	Matrix:	Soil	Date Received:	01.31.20 16.03
Lab Sample Id:	651046-002	Date Collected:	01.30.20 14.30	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.31.20 18.00	Basis:	Wet Weight
Seq Number:	3115294				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**144**	9.98	mg/kg	01.31.20 22.50		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	01.31.20 17.00	Basis:	Wet Weight
Seq Number:	3115292				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<251	251	mg/kg	02.03.20 13.02	U	5
Diesel Range Organics (DRO)	C10C28DRO	**8170**	251	mg/kg	02.03.20 13.02		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**627**	251	mg/kg	02.03.20 13.02		5
Total GRO-DRO	PHC628	**8170**	251	mg/kg	02.03.20 13.02		5
Total TPH	PHC635	**8800**	251	mg/kg	02.03.20 13.02		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	02.03.20 13.02	
o-Terphenyl	84-15-1	100	%	70-135	02.03.20 13.02	

Certificate of Analytical Results 651046

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**SS09**	Matrix:	Soil	Date Received:	01.31.20 16.03
Lab Sample Id:	651046-002	Date Collected:	01.30.20 14.30	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.31.20 20.00	Basis:	Wet Weight
Seq Number:	3115251				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.01.20 03.12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.01.20 03.12	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.01.20 03.12	U	1
m,p-Xylenes	179601-23-1	**0.00866**	0.00401	mg/kg	02.01.20 03.12		1
o-Xylene	95-47-6	**0.00210**	0.00200	mg/kg	02.01.20 03.12		1
Total Xylenes	1330-20-7	**0.0108**	0.00200	mg/kg	02.01.20 03.12		1
Total BTEX		**0.0108**	0.00200	mg/kg	02.01.20 03.12		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	127	%	70-130	02.01.20 03.12	
1,4-Difluorobenzene	540-36-3	101	%	70-130	02.01.20 03.12	

Certificate of Analytical Results 651046

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**SS10**	Matrix:	Soil	Date Received:	01.31.20 16.03
Lab Sample Id:	651046-003	Date Collected:	01.30.20 14.35	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.31.20 18.00	Basis:	Wet Weight
Seq Number:	3115294				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**27.8**	9.96	mg/kg	01.31.20 22.56		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	01.31.20 17.00	Basis:	Wet Weight
Seq Number:	3115292				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**93.5**	50.2	mg/kg	01.31.20 23.44		1
Diesel Range Organics (DRO)	C10C28DRO	**4940**	50.2	mg/kg	01.31.20 23.44		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**492**	50.2	mg/kg	01.31.20 23.44		1
Total GRO-DRO	PHC628	**5030**	50.2	mg/kg	01.31.20 23.44		1
Total TPH	PHC635	**5530**	50.2	mg/kg	01.31.20 23.44		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	01.31.20 23.44	
o-Terphenyl	84-15-1	128	%	70-135	01.31.20 23.44	

Certificate of Analytical Results 651046

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**SS10**	Matrix:	Soil	Date Received:	01.31.20 16.03
Lab Sample Id:	651046-003	Date Collected:	01.30.20 14.35	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.31.20 20.00	Basis:	Wet Weight
Seq Number:	3115251				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.01.20 03.33	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.01.20 03.33	U	1
Ethylbenzene	100-41-4	**0.00345**	0.00200	mg/kg	02.01.20 03.33		1
m,p-Xylenes	179601-23-1	**0.00618**	0.00400	mg/kg	02.01.20 03.33		1
o-Xylene	95-47-6	**0.00443**	0.00200	mg/kg	02.01.20 03.33		1
Total Xylenes	1330-20-7	**0.0106**	0.00200	mg/kg	02.01.20 03.33		1
Total BTEX		**0.0141**	0.00200	mg/kg	02.01.20 03.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	02.01.20 03.33	
4-Bromofluorobenzene	460-00-4	124	%	70-130	02.01.20 03.33	

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 651046

LT Environmental, Inc.

JRU D12 CTB

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3115294 — Matrix: Solid — Date Prep: 01.31.20
MB Sample Id: 7695746-1-BLK — LCS Sample Id: 7695746-1-BKS — LCSD Sample Id: 7695746-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	254	102	255	102	90-110	0	20	mg/kg	01.31.20 21:21	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3115294 — Matrix: Soil — Date Prep: 01.31.20
Parent Sample Id: 651013-028 — MS Sample Id: 651013-028 S — MSD Sample Id: 651013-028 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	42.4	201	251	104	253	105	90-110	1	20	mg/kg	02.03.20 11:49	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3115294 — Matrix: Soil — Date Prep: 01.31.20
Parent Sample Id: 651046-003 — MS Sample Id: 651046-003 S — MSD Sample Id: 651046-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	27.8	199	236	105	236	104	90-110	0	20	mg/kg	01.31.20 23:02	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3115292 — Matrix: Solid — Date Prep: 01.31.20
MB Sample Id: 7695777-1-BLK — LCS Sample Id: 7695777-1-BKS — LCSD Sample Id: 7695777-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	950	95	883	88	70-135	7	35	mg/kg	01.31.20 20:26	
Diesel Range Organics (DRO)	<50.0	1000	781	78	747	75	70-135	4	35	mg/kg	01.31.20 20:26	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		113		105		70-135	%	01.31.20 20:26
o-Terphenyl	112		105		99		70-135	%	01.31.20 20:26

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3115292 — Matrix: Solid — Date Prep: 01.31.20
MB Sample Id: 7695777-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	01.31.20 20:26	

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

QC Summary 651046

LT Environmental, Inc.

JRU D12 CTB

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3115292 — Matrix: Soil — Date Prep: 01.31.20
Parent Sample Id: 651025-018 — MS Sample Id: 651025-018 S — MSD Sample Id: 651025-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	1110	111	1100	109	70-135	1	35	mg/kg	01.31.20 21:06	
Diesel Range Organics (DRO)	<49.9	997	1140	114	1100	109	70-135	4	35	mg/kg	01.31.20 21:06	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		116		70-135	%	01.31.20 21:06
o-Terphenyl	111		102		70-135	%	01.31.20 21:06

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3115251 — Matrix: Solid — Date Prep: 01.31.20
MB Sample Id: 7695742-1-BLK — LCS Sample Id: 7695742-1-BKS — LCSD Sample Id: 7695742-1-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	0.0920	92	0.102	102	70-130	10	35	mg/kg	02.01.20 01:10	
Toluene	<0.00200	0.100	0.0892	89	0.0987	99	70-130	10	35	mg/kg	02.01.20 01:10	
Ethylbenzene	<0.00200	0.100	0.0859	86	0.0950	95	71-129	10	35	mg/kg	02.01.20 01:10	
m,p-Xylenes	<0.00400	0.200	0.176	88	0.195	98	70-135	10	35	mg/kg	02.01.20 01:10	
o-Xylene	<0.00200	0.100	0.0884	88	0.0978	98	71-133	10	35	mg/kg	02.01.20 01:10	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		102		104		70-130	%	02.01.20 01:10
4-Bromofluorobenzene	95		95		95		70-130	%	02.01.20 01:10

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3115251 — Matrix: Soil — Date Prep: 01.31.20
Parent Sample Id: 651046-001 — MS Sample Id: 651046-001 S — MSD Sample Id: 651046-001 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	0.0755	76	0.0870	88	70-130	14	35	mg/kg	02.01.20 01:51	
Toluene	<0.00199	0.0994	0.0785	79	0.0754	76	70-130	4	35	mg/kg	02.01.20 01:51	
Ethylbenzene	0.00507	0.0994	0.0815	77	0.0804	76	71-129	1	35	mg/kg	02.01.20 01:51	
m,p-Xylenes	0.0134	0.199	0.190	89	0.187	88	70-135	2	35	mg/kg	02.01.20 01:51	
o-Xylene	0.0126	0.0994	0.0865	74	0.0903	78	71-133	4	35	mg/kg	02.01.20 01:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		102		70-130	%	02.01.20 01:51
4-Bromofluorobenzene	114		123		70-130	%	02.01.20 01:51

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

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)
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Work Order No: 651046

Page 1 of 1

Project Manager:	Dan Moir	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:	dmoir@ltenv.com rmcafee@ltenv.com

Work Order Comments

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

Project Name:	JRU DI2 CTB
Project Number:	01291941
P.O. Number:	
Sampler's Name:	Robert McAfee

Turn Around

Routine ☐
Rush: 24hr
Due Date:

SAMPLE RECEIPT

Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	1.2	Thermometer ID	T-NM-007
Received Intact:	(Yes) No	Correction Factor:	-0.2
Cooler Custody Seals:	Yes (No) N/A	Total Containers:	3
Sample Custody Seals:	Yes (No) N/A		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
SS08	S	01/30/20	1425	0.5	1	X	X	X
SS09			1430			X	X	X
SS10			1435			X	X	X

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		1/31/20 16:03	2			
3				4			
5				6			

Revised Date 051418 Rev. 2018 1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01.31.2020 04.03.00 PM

Work Order #: 651046

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

Temperature Measuring device used : T-NM-007

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 01.31.2020

Checklist reviewed by: Jessica Kramer Date: 02.03.2020

Jessica Kramer

Analytical Report 651047

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU DI2 CTB

012919141

03-FEB-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

03-FEB-20

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

Reference: XENCO Report No(s): **651047**
JRU DI2 CTB
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 651047. 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. 651047 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 651047

LT Environmental, Inc., Arvada, CO

JRU DI2 CTB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	01-30-20 15:38	1 ft	651047-001

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU DI2 CTB

Project ID: *012919141*
Work Order Number(s): *651047*

Report Date: *03-FEB-20*
Date Received: *01/31/2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3115251 BTEX by EPA 8021B

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

Certificate of Analysis Summary 651047

LT Environmental, Inc., Arvada, CO

Project Name: JRU DI2 CTB

Project Id: 012919141
Contact: Dan Moir
Project Location:

Date Received in Lab: Fri Jan-31-20 04:03 pm
Report Date: 03-FEB-20
Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	651047-001					
	Field Id:	BH01					
	Depth:	1- ft					
	Matrix:	SOIL					
	Sampled:	Jan-30-20 15:38					
BTEX by EPA 8021B	***Extracted:***	Jan-31-20 20:00					
	Analyzed:	Feb-01-20 20:13					
	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:***	Jan-31-20 18:00					
	Analyzed:	Feb-01-20 00:15					
	Units/RL:	mg/kg	RL				
Chloride		64.7	9.98				
TPH by SW8015 Mod	***Extracted:***	Jan-31-20 17:00					
	Analyzed:	Feb-03-20 12:22					
	Units/RL:	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0				
Diesel Range Organics (DRO)		299	50.0				
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0				
Total GRO-DRO		299	50.0				
Total TPH		299	50.0				

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

Jessica Kramer
Project Assistant

Certificate of Analytical Results 651047

LT Environmental, Inc., Arvada, CO

JRU DI2 CTB

Sample Id: **BH01** Matrix: Soil Date Received:01.31.20 16.03
Lab Sample Id: 651047-001 Date Collected: 01.30.20 15.38 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: MAB % Moisture:
Analyst: MAB Date Prep: 01.31.20 18.00 Basis: Wet Weight
Seq Number: 3115294

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**64.7**	9.98	mg/kg	02.01.20 00.15		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
Tech: DTH % Moisture:
Analyst: DTH Date Prep: 01.31.20 17.00 Basis: Wet Weight
Seq Number: 3115292

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.03.20 12.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	**299**	50.0	mg/kg	02.03.20 12.22		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.03.20 12.22	U	1
Total GRO-DRO	PHC628	**299**	50.0	mg/kg	02.03.20 12.22		1
Total TPH	PHC635	**299**	50.0	mg/kg	02.03.20 12.22		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	02.03.20 12.22	
o-Terphenyl	84-15-1	97	%	70-135	02.03.20 12.22	

Certificate of Analytical Results 651047

LT Environmental, Inc., Arvada, CO

JRU DI2 CTB

Sample Id:	**BH01**	Matrix:	Soil	Date Received:	01.31.20 16.03
Lab Sample Id:	651047-001	Date Collected:	01.30.20 15.38	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.31.20 20.00	Basis:	Wet Weight
Seq Number:	3115251				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.01.20 20.13	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.01.20 20.13	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.01.20 20.13	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.01.20 20.13	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.01.20 20.13	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.01.20 20.13	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.01.20 20.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	02.01.20 20.13	
1,4-Difluorobenzene	540-36-3	100	%	70-130	02.01.20 20.13	

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 651047

LT Environmental, Inc.

JRU DI2 CTB

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3115294 — Matrix: Solid — Date Prep: 01.31.20
MB Sample Id: 7695746-1-BLK — LCS Sample Id: 7695746-1-BKS — LCSD Sample Id: 7695746-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	254	102	255	102	90-110	0	20	mg/kg	01.31.20 21:21	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3115294 — Matrix: Soil — Date Prep: 01.31.20
Parent Sample Id: 651013-028 — MS Sample Id: 651013-028 S — MSD Sample Id: 651013-028 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	42.4	201	251	104	253	105	90-110	1	20	mg/kg	02.03.20 11:49	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3115294 — Matrix: Soil — Date Prep: 01.31.20
Parent Sample Id: 651046-003 — MS Sample Id: 651046-003 S — MSD Sample Id: 651046-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	27.8	199	236	105	236	104	90-110	0	20	mg/kg	01.31.20 23:02	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3115292 — Matrix: Solid — Date Prep: 01.31.20
MB Sample Id: 7695777-1-BLK — LCS Sample Id: 7695777-1-BKS — LCSD Sample Id: 7695777-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	950	95	883	88	70-135	7	35	mg/kg	01.31.20 20:26	
Diesel Range Organics (DRO)	<50.0	1000	781	78	747	75	70-135	4	35	mg/kg	01.31.20 20:26	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		113		105		70-135	%	01.31.20 20:26
o-Terphenyl	112		105		99		70-135	%	01.31.20 20:26

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3115292 — Matrix: Solid — Date Prep: 01.31.20
MB Sample Id: 7695777-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	01.31.20 20:26	

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

QC Summary 651047

LT Environmental, Inc.

JRU DI2 CTB

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3115292 — Matrix: Soil — Date Prep: 01.31.20
Parent Sample Id: 651025-018 — MS Sample Id: 651025-018 S — MSD Sample Id: 651025-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	1110	111	1100	109	70-135	1	35	mg/kg	01.31.20 21:06	
Diesel Range Organics (DRO)	<49.9	997	1140	114	1100	109	70-135	4	35	mg/kg	01.31.20 21:06	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		116		70-135	%	01.31.20 21:06
o-Terphenyl	111		102		70-135	%	01.31.20 21:06

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3115251 — Matrix: Solid — Date Prep: 01.31.20
MB Sample Id: 7695742-1-BLK — LCS Sample Id: 7695742-1-BKS — LCSD Sample Id: 7695742-1-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	0.0920	92	0.102	102	70-130	10	35	mg/kg	02.01.20 01:10	
Toluene	<0.00200	0.100	0.0892	89	0.0987	99	70-130	10	35	mg/kg	02.01.20 01:10	
Ethylbenzene	<0.00200	0.100	0.0859	86	0.0950	95	71-129	10	35	mg/kg	02.01.20 01:10	
m,p-Xylenes	<0.00400	0.200	0.176	88	0.195	98	70-135	10	35	mg/kg	02.01.20 01:10	
o-Xylene	<0.00200	0.100	0.0884	88	0.0978	98	71-133	10	35	mg/kg	02.01.20 01:10	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		102		104		70-130	%	02.01.20 01:10
4-Bromofluorobenzene	95		95		95		70-130	%	02.01.20 01:10

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3115251 — Matrix: Soil — Date Prep: 01.31.20
Parent Sample Id: 651046-001 — MS Sample Id: 651046-001 S — MSD Sample Id: 651046-001 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	0.0755	76	0.0870	88	70-130	14	35	mg/kg	02.01.20 01:51	
Toluene	<0.00199	0.0994	0.0785	79	0.0754	76	70-130	4	35	mg/kg	02.01.20 01:51	
Ethylbenzene	0.00507	0.0994	0.0815	77	0.0804	76	71-129	1	35	mg/kg	02.01.20 01:51	
m,p-Xylenes	0.0134	0.199	0.190	89	0.187	88	70-135	2	35	mg/kg	02.01.20 01:51	
o-Xylene	0.0126	0.0994	0.0865	74	0.0903	78	71-133	4	35	mg/kg	02.01.20 01:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		102		70-130	%	02.01.20 01:51
4-Bromofluorobenzene	114		123		70-130	%	02.01.20 01:51

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

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
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Work Order No: U51047

Page 1 of 1

Project Manager:	Dan Moir	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:	dmoir@ltenv.com mcafee@ltenv.com

Work Order Comments

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

Project Name:	JRV DI2 CTB
Project Number:	012919141
P.O. Number:	
Sampler's Name:	Robert McAfee

Turn Around

Routine ☐
Rush: 24hr
Due Date:

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	Yes (No)
Temperature (°C):	1.2	Thermometer ID	
Received Intact:	(Yes) No	T-NM007	
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	1

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
BH01	S	01/30/20	1538	1'	1	X	X	X

Work Order Notes

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

Sample Comments

disate

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		1/31/20 11:03	2		
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01.31.2020 04.03.00 PM

Work Order #: 651047

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

Temperature Measuring device used : T-NM-007

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 01.31.2020

Checklist reviewed by: Jessica Kramer Date: 02.03.2020

Jessica Kramer

Analytical Report 652249

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU D12 CTB

012919141

14-FEB-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

14-FEB-20

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

Reference: XENCO Report No(s): **652249**
JRU D12 CTB
Project Address: Eddy

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) 652249. 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. 652249 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 652249

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS03	S	02-12-20 10:00	0.5 ft	652249-001
FS04	S	02-12-20 10:02	0.5 ft	652249-002
FS05	S	02-12-20 10:05	0.5 ft	652249-003
FS06	S	02-12-20 10:09	0.5 ft	652249-004
FS07	S	02-12-20 10:11	0.5 ft	652249-005
FS08	S	02-12-20 10:13	0.5 ft	652249-006
FS09	S	02-12-20 10:16	0.5 ft	652249-007

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU D12 CTB

Project ID: *012919141*
Work Order Number(s): *652249*

Report Date: *14-FEB-20*
Date Received: *02/13/2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3116469 TPH by SW8015 Mod

Lab Sample ID 652249-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Diesel Range Organics (DRO) recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 652249-001, -002, -003, -004, -005, -006, -007.

The Laboratory Control Sample for Diesel Range Organics (DRO) is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3116480 BTEX by EPA 8021B

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

Certificate of Analysis Summary 652249

LT Environmental, Inc., Arvada, CO

Project Name: JRU D12 CTB

Project Id: 012919141
Contact: Dan Moir
Project Location: Eddy

Date Received in Lab: Thu Feb-13-20 08:50 am
Report Date: 14-FEB-20
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	652249-001		652249-002		652249-003		652249-004		652249-005		652249-006	
	Field Id:	FS03		FS04		FS05		FS06		FS07		FS08	
	Depth:	0.5- ft		0.5- ft		0.5- ft		0.5- ft		0.5- ft		0.5- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-12-20 10:00		Feb-12-20 10:02		Feb-12-20 10:05		Feb-12-20 10:09		Feb-12-20 10:11		Feb-12-20 10:13	
BTEX by EPA 8021B	*Extracted:*	Feb-13-20 10:00		Feb-13-20 10:00		Feb-13-20 10:00		Feb-13-20 10:00		Feb-13-20 10:00		Feb-13-20 10:00	
	Analyzed:	Feb-13-20 13:51		Feb-13-20 14:11		Feb-13-20 14:32		Feb-13-20 14:52		Feb-13-20 15:12		Feb-13-20 15:33	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.0196	0.0196	<0.0196	0.0196	<0.0185	0.0185	<0.0192	0.0192	<0.0185	0.0185	<0.0192	0.0192
Toluene		<0.0196	0.0196	<0.0196	0.0196	<0.0185	0.0185	<0.0192	0.0192	<0.0185	0.0185	<0.0192	0.0192
Ethylbenzene		<0.0196	0.0196	<0.0196	0.0196	<0.0185	0.0185	0.109	0.0192	<0.0185	0.0185	<0.0192	0.0192
m,p-Xylenes		<0.0392	0.0392	<0.0392	0.0392	0.0937	0.0370	0.756	0.0385	0.0584	0.0370	<0.0385	0.0385
o-Xylene		<0.0196	0.0196	<0.0196	0.0196	0.0357	0.0185	0.364	0.0192	<0.0185	0.0185	<0.0192	0.0192
Total Xylenes		<0.0196	0.0196	<0.0196	0.0196	0.129	0.0185	1.12	0.0192	0.0584	0.0185	<0.0192	0.0192
Total BTEX		<0.0196	0.0196	<0.0196	0.0196	0.129	0.0185	1.23	0.0192	0.0584	0.0185	<0.0192	0.0192
Chloride by EPA 300	*Extracted:*	Feb-13-20 11:41		Feb-13-20 11:41		Feb-13-20 11:41		Feb-13-20 11:41		Feb-13-20 11:41		Feb-13-20 11:41	
	Analyzed:	Feb-13-20 12:36		Feb-13-20 12:52		Feb-13-20 12:58		Feb-13-20 13:03		Feb-13-20 13:09		Feb-13-20 13:25	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		278	10.0	508	50.5	168	10.0	62.2	9.92	240	9.92	261	10.0
TPH by SW8015 Mod	*Extracted:*	Feb-13-20 10:19		Feb-13-20 10:19		Feb-13-20 10:19		Feb-13-20 10:19		Feb-13-20 10:19		Feb-13-20 10:19	
	Analyzed:	Feb-13-20 10:30		Feb-13-20 10:50		Feb-13-20 11:09		Feb-13-20 15:36		Feb-13-20 11:29		Feb-13-20 11:29	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.1	50.1	<50.0	50.0	<50.2	50.2	<251	251	<49.8	49.8	<49.9	49.9
Diesel Range Organics (DRO)		4330	50.1	2860	50.0	3040	50.2	6430	251	2320	49.8	2370	49.9
Motor Oil Range Hydrocarbons (MRO)		441	50.1	293	50.0	292	50.2	653	251	255	49.8	231	49.9
Total GRO-DRO		4330	50.1	2860	50.0	3040	50.2	6430	251	2320	49.8	2370	49.9
Total TPH		4770	50.1	3150	50.0	3330	50.2	7080	251	2580	49.8	2600	49.9

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

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 652249

LT Environmental, Inc., Arvada, CO

Project Name: JRU D12 CTB

Project Id: 012919141
Contact: Dan Moir
Project Location: Eddy

Date Received in Lab: Thu Feb-13-20 08:50 am
Report Date: 14-FEB-20
Project Manager: Jessica Kramer

Analysis Requested								
	Lab Id:	652249-007						
	Field Id:	FS09						
	Depth:	0.5- ft						
	Matrix:	SOIL						
	Sampled:	Feb-12-20 10:16						
BTEX by EPA 8021B	***Extracted:***	Feb-13-20 10:00						
	Analyzed:	Feb-13-20 15:53						
	Units/RL:	mg/kg	RL					
Benzene		<0.0189	0.0189					
Toluene		<0.0189	0.0189					
Ethylbenzene		<0.0189	0.0189					
m,p-Xylenes		0.0506	0.0377					
o-Xylene		0.0283	0.0189					
Total Xylenes		0.0789	0.0189					
Total BTEX		0.0789	0.0189					
Chloride by EPA 300	***Extracted:***	Feb-13-20 11:41						
	Analyzed:	Feb-13-20 13:31						
	Units/RL:	mg/kg	RL					
Chloride		189	10.1					
TPH by SW8015 Mod	***Extracted:***	Feb-13-20 10:19						
	Analyzed:	Feb-13-20 11:49						
	Units/RL:	mg/kg	RL					
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0					
Diesel Range Organics (DRO)		2520	50.0					
Motor Oil Range Hydrocarbons (MRO)		232	50.0					
Total GRO-DRO		2520	50.0					
Total TPH		2750	50.0					

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analytical Results 652249

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	02.13.20 08.50
Lab Sample Id:	652249-001	Date Collected:	02.12.20 10.00	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.13.20 11.41	Basis:	Wet Weight
Seq Number:	3116451				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**278**	10.0	mg/kg	02.13.20 12.36		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	02.13.20 10.19	Basis:	Wet Weight
Seq Number:	3116469				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	02.13.20 10.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	**4330**	50.1	mg/kg	02.13.20 10.30		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**441**	50.1	mg/kg	02.13.20 10.30		1
Total GRO-DRO	PHC628	**4330**	50.1	mg/kg	02.13.20 10.30		1
Total TPH	PHC635	**4770**	50.1	mg/kg	02.13.20 10.30		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.13.20 10.30	
o-Terphenyl	84-15-1	104	%	70-135	02.13.20 10.30	

Certificate of Analytical Results 652249

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	02.13.20 08.50
Lab Sample Id:	652249-001	Date Collected:	02.12.20 10.00	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.13.20 10.00	Basis:	Wet Weight
Seq Number:	3116480				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0196	0.0196	mg/kg	02.13.20 13.51	U	1
Toluene	108-88-3	<0.0196	0.0196	mg/kg	02.13.20 13.51	U	1
Ethylbenzene	100-41-4	<0.0196	0.0196	mg/kg	02.13.20 13.51	U	1
m,p-Xylenes	179601-23-1	<0.0392	0.0392	mg/kg	02.13.20 13.51	U	1
o-Xylene	95-47-6	<0.0196	0.0196	mg/kg	02.13.20 13.51	U	1
Total Xylenes	1330-20-7	<0.0196	0.0196	mg/kg	02.13.20 13.51	U	1
Total BTEX		<0.0196	0.0196	mg/kg	02.13.20 13.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	02.13.20 13.51	
4-Bromofluorobenzene	460-00-4	91	%	70-130	02.13.20 13.51	

Certificate of Analytical Results 652249

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	02.13.20 08.50
Lab Sample Id:	652249-002	Date Collected:	02.12.20 10.02	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.13.20 11.41	Basis:	Wet Weight
Seq Number:	3116451				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**508**	50.5	mg/kg	02.13.20 12.52		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	02.13.20 10.19	Basis:	Wet Weight
Seq Number:	3116469				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.13.20 10.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	**2860**	50.0	mg/kg	02.13.20 10.50		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**293**	50.0	mg/kg	02.13.20 10.50		1
Total GRO-DRO	PHC628	**2860**	50.0	mg/kg	02.13.20 10.50		1
Total TPH	PHC635	**3150**	50.0	mg/kg	02.13.20 10.50		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	02.13.20 10.50	
o-Terphenyl	84-15-1	100	%	70-135	02.13.20 10.50	

Certificate of Analytical Results 652249

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	02.13.20 08.50
Lab Sample Id:	652249-002	Date Collected:	02.12.20 10.02	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.13.20 10.00	Basis:	Wet Weight
Seq Number:	3116480				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0196	0.0196	mg/kg	02.13.20 14.11	U	1
Toluene	108-88-3	<0.0196	0.0196	mg/kg	02.13.20 14.11	U	1
Ethylbenzene	100-41-4	<0.0196	0.0196	mg/kg	02.13.20 14.11	U	1
m,p-Xylenes	179601-23-1	<0.0392	0.0392	mg/kg	02.13.20 14.11	U	1
o-Xylene	95-47-6	<0.0196	0.0196	mg/kg	02.13.20 14.11	U	1
Total Xylenes	1330-20-7	<0.0196	0.0196	mg/kg	02.13.20 14.11	U	1
Total BTEX		<0.0196	0.0196	mg/kg	02.13.20 14.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	02.13.20 14.11	
1,4-Difluorobenzene	540-36-3	103	%	70-130	02.13.20 14.11	

Certificate of Analytical Results 652249

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**FS05**	Matrix:	Soil	Date Received:	02.13.20 08.50
Lab Sample Id:	652249-003	Date Collected:	02.12.20 10.05	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.13.20 11.41	Basis:	Wet Weight
Seq Number:	3116451				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**168**	10.0	mg/kg	02.13.20 12.58		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	02.13.20 10.19	Basis:	Wet Weight
Seq Number:	3116469				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	02.13.20 11.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	**3040**	50.2	mg/kg	02.13.20 11.09		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**292**	50.2	mg/kg	02.13.20 11.09		1
Total GRO-DRO	PHC628	**3040**	50.2	mg/kg	02.13.20 11.09		1
Total TPH	PHC635	**3330**	50.2	mg/kg	02.13.20 11.09		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	02.13.20 11.09	
o-Terphenyl	84-15-1	123	%	70-135	02.13.20 11.09	

Certificate of Analytical Results 652249

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**FS05**	Matrix:	Soil	Date Received:	02.13.20 08.50
Lab Sample Id:	652249-003	Date Collected:	02.12.20 10.05	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.13.20 10.00	Basis:	Wet Weight
Seq Number:	3116480				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0185	0.0185	mg/kg	02.13.20 14.32	U	1
Toluene	108-88-3	<0.0185	0.0185	mg/kg	02.13.20 14.32	U	1
Ethylbenzene	100-41-4	<0.0185	0.0185	mg/kg	02.13.20 14.32	U	1
m,p-Xylenes	179601-23-1	**0.0937**	0.0370	mg/kg	02.13.20 14.32		1
o-Xylene	95-47-6	**0.0357**	0.0185	mg/kg	02.13.20 14.32		1
Total Xylenes	1330-20-7	**0.129**	0.0185	mg/kg	02.13.20 14.32		1
Total BTEX		**0.129**	0.0185	mg/kg	02.13.20 14.32		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	02.13.20 14.32	
1,4-Difluorobenzene	540-36-3	101	%	70-130	02.13.20 14.32	

Certificate of Analytical Results 652249

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**FS06**	Matrix:	Soil	Date Received:	02.13.20 08.50
Lab Sample Id:	652249-004	Date Collected:	02.12.20 10.09	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.13.20 11.41	Basis:	Wet Weight
Seq Number:	3116451				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**62.2**	9.92	mg/kg	02.13.20 13.03		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	02.13.20 10.19	Basis:	Wet Weight
Seq Number:	3116469				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<251	251	mg/kg	02.13.20 15.36	U	5
Diesel Range Organics (DRO)	C10C28DRO	**6430**	251	mg/kg	02.13.20 15.36		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**653**	251	mg/kg	02.13.20 15.36		5
Total GRO-DRO	PHC628	**6430**	251	mg/kg	02.13.20 15.36		5
Total TPH	PHC635	**7080**	251	mg/kg	02.13.20 15.36		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	02.13.20 15.36	
o-Terphenyl	84-15-1	107	%	70-135	02.13.20 15.36	

Certificate of Analytical Results 652249

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**FS06**	Matrix:	Soil	Date Received:	02.13.20 08.50
Lab Sample Id:	652249-004	Date Collected:	02.12.20 10.09	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.13.20 10.00	Basis:	Wet Weight
Seq Number:	3116480				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0192	0.0192	mg/kg	02.13.20 14.52	U	1
Toluene	108-88-3	<0.0192	0.0192	mg/kg	02.13.20 14.52	U	1
Ethylbenzene	100-41-4	**0.109**	0.0192	mg/kg	02.13.20 14.52		1
m,p-Xylenes	179601-23-1	**0.756**	0.0385	mg/kg	02.13.20 14.52		1
o-Xylene	95-47-6	**0.364**	0.0192	mg/kg	02.13.20 14.52		1
Total Xylenes	1330-20-7	**1.12**	0.0192	mg/kg	02.13.20 14.52		1
Total BTEX		**1.23**	0.0192	mg/kg	02.13.20 14.52		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	02.13.20 14.52	
1,4-Difluorobenzene	540-36-3	100	%	70-130	02.13.20 14.52	

Certificate of Analytical Results 652249

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**FS07**	Matrix:	Soil	Date Received:	02.13.20 08.50
Lab Sample Id:	652249-005	Date Collected:	02.12.20 10.11	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.13.20 11.41	Basis:	Wet Weight
Seq Number:	3116451				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**240**	9.92	mg/kg	02.13.20 13.09		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	02.13.20 10.19	Basis:	Wet Weight
Seq Number:	3116469				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	02.13.20 11.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	**2320**	49.8	mg/kg	02.13.20 11.29		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**255**	49.8	mg/kg	02.13.20 11.29		1
Total GRO-DRO	PHC628	**2320**	49.8	mg/kg	02.13.20 11.29		1
Total TPH	PHC635	**2580**	49.8	mg/kg	02.13.20 11.29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	02.13.20 11.29	
o-Terphenyl	84-15-1	98	%	70-135	02.13.20 11.29	

Certificate of Analytical Results 652249

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**FS07**	Matrix:	Soil	Date Received:	02.13.20 08.50
Lab Sample Id:	652249-005	Date Collected:	02.12.20 10.11	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.13.20 10.00	Basis:	Wet Weight
Seq Number:	3116480				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0185	0.0185	mg/kg	02.13.20 15.12	U	1
Toluene	108-88-3	<0.0185	0.0185	mg/kg	02.13.20 15.12	U	1
Ethylbenzene	100-41-4	<0.0185	0.0185	mg/kg	02.13.20 15.12	U	1
m,p-Xylenes	179601-23-1	**0.0584**	0.0370	mg/kg	02.13.20 15.12		1
o-Xylene	95-47-6	<0.0185	0.0185	mg/kg	02.13.20 15.12	U	1
Total Xylenes	1330-20-7	**0.0584**	0.0185	mg/kg	02.13.20 15.12		1
Total BTEX		**0.0584**	0.0185	mg/kg	02.13.20 15.12		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	125	%	70-130	02.13.20 15.12	
1,4-Difluorobenzene	540-36-3	102	%	70-130	02.13.20 15.12	

Certificate of Analytical Results 652249

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**FS08**	Matrix:	Soil	Date Received:	02.13.20 08.50
Lab Sample Id:	652249-006	Date Collected:	02.12.20 10.13	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.13.20 11.41	Basis:	Wet Weight
Seq Number:	3116451				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**261**	10.0	mg/kg	02.13.20 13.25		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	02.13.20 10.19	Basis:	Wet Weight
Seq Number:	3116469				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.13.20 11.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	**2370**	49.9	mg/kg	02.13.20 11.29		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**231**	49.9	mg/kg	02.13.20 11.29		1
Total GRO-DRO	PHC628	**2370**	49.9	mg/kg	02.13.20 11.29		1
Total TPH	PHC635	**2600**	49.9	mg/kg	02.13.20 11.29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	02.13.20 11.29	
o-Terphenyl	84-15-1	106	%	70-135	02.13.20 11.29	

Certificate of Analytical Results 652249

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**FS08**	Matrix:	Soil	Date Received:	02.13.20 08.50
Lab Sample Id:	652249-006	Date Collected:	02.12.20 10.13	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.13.20 10.00	Basis:	Wet Weight
Seq Number:	3116480				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0192	0.0192	mg/kg	02.13.20 15.33	U	1
Toluene	108-88-3	<0.0192	0.0192	mg/kg	02.13.20 15.33	U	1
Ethylbenzene	100-41-4	<0.0192	0.0192	mg/kg	02.13.20 15.33	U	1
m,p-Xylenes	179601-23-1	<0.0385	0.0385	mg/kg	02.13.20 15.33	U	1
o-Xylene	95-47-6	<0.0192	0.0192	mg/kg	02.13.20 15.33	U	1
Total Xylenes	1330-20-7	<0.0192	0.0192	mg/kg	02.13.20 15.33	U	1
Total BTEX		<0.0192	0.0192	mg/kg	02.13.20 15.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	02.13.20 15.33	
4-Bromofluorobenzene	460-00-4	114	%	70-130	02.13.20 15.33	

Certificate of Analytical Results 652249

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**FS09**	Matrix:	Soil	Date Received:	02.13.20 08.50
Lab Sample Id:	652249-007	Date Collected:	02.12.20 10.16	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.13.20 11.41	Basis:	Wet Weight
Seq Number:	3116451				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**189**	10.1	mg/kg	02.13.20 13.31		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	02.13.20 10.19	Basis:	Wet Weight
Seq Number:	3116469				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.13.20 11.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	**2520**	50.0	mg/kg	02.13.20 11.49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**232**	50.0	mg/kg	02.13.20 11.49		1
Total GRO-DRO	PHC628	**2520**	50.0	mg/kg	02.13.20 11.49		1
Total TPH	PHC635	**2750**	50.0	mg/kg	02.13.20 11.49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	02.13.20 11.49	
o-Terphenyl	84-15-1	117	%	70-135	02.13.20 11.49	

Certificate of Analytical Results 652249

LT Environmental, Inc., Arvada, CO

JRU D12 CTB

Sample Id:	**FS09**	Matrix:	Soil	Date Received:	02.13.20 08.50
Lab Sample Id:	652249-007	Date Collected:	02.12.20 10.16	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.13.20 10.00	Basis:	Wet Weight
Seq Number:	3116480				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0189	0.0189	mg/kg	02.13.20 15.53	U	1
Toluene	108-88-3	<0.0189	0.0189	mg/kg	02.13.20 15.53	U	1
Ethylbenzene	100-41-4	<0.0189	0.0189	mg/kg	02.13.20 15.53	U	1
m,p-Xylenes	179601-23-1	**0.0506**	0.0377	mg/kg	02.13.20 15.53		1
o-Xylene	95-47-6	**0.0283**	0.0189	mg/kg	02.13.20 15.53		1
Total Xylenes	1330-20-7	**0.0789**	0.0189	mg/kg	02.13.20 15.53		1
Total BTEX		**0.0789**	0.0189	mg/kg	02.13.20 15.53		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	02.13.20 15.53	
4-Bromofluorobenzene	460-00-4	129	%	70-130	02.13.20 15.53	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 652249

LT Environmental, Inc.

JRU D12 CTB

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3116451 — Matrix: Solid — Date Prep: 02.13.20
MB Sample Id: 7696580-1-BLK — LCS Sample Id: 7696580-1-BKS — LCSD Sample Id: 7696580-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	255	102	262	105	90-110	3	20	mg/kg	02.13.20 12:25	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3116451 — Matrix: Soil — Date Prep: 02.13.20
Parent Sample Id: 652249-001 — MS Sample Id: 652249-001 S — MSD Sample Id: 652249-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	278	201	492	106	493	107	90-110	0	20	mg/kg	02.13.20 12:41	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3116451 — Matrix: Soil — Date Prep: 02.13.20
Parent Sample Id: 652255-001 — MS Sample Id: 652255-001 S — MSD Sample Id: 652255-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	305	200	512	104	516	106	90-110	1	20	mg/kg	02.13.20 14:05	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3116469 — Matrix: Solid — Date Prep: 02.13.20
MB Sample Id: 7696566-1-BLK — LCS Sample Id: 7696566-1-BKS — LCSD Sample Id: 7696566-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	895	90	853	85	70-135	5	35	mg/kg	02.13.20 10:11	
Diesel Range Organics (DRO)	<50.0	1000	980	98	759	76	70-135	25	35	mg/kg	02.13.20 10:11	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		135		114		70-135	%	02.13.20 10:11
o-Terphenyl	129		127		100		70-135	%	02.13.20 10:11

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3116469 — Matrix: Solid — Date Prep: 02.13.20
MB Sample Id: 7696566-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.13.20 09:51	

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

QC Summary 652249

LT Environmental, Inc.

JRU D12 CTB

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3116469 — Matrix: Soil — Date Prep: 02.13.20
Parent Sample Id: 652249-001 — MS Sample Id: 652249-001 S — MSD Sample Id: 652249-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	897	90	909	91	70-135	1	35	mg/kg	02.13.20 14:36	
Diesel Range Organics (DRO)	4330	1000	4990	66	5180	85	70-135	4	35	mg/kg	02.13.20 14:36	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		126		70-135	%	02.13.20 14:36
o-Terphenyl	108		105		70-135	%	02.13.20 14:36

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3116480 — Matrix: Solid — Date Prep: 02.13.20
MB Sample Id: 7696582-1-BLK — LCS Sample Id: 7696582-1-BKS — LCSD Sample Id: 7696582-1-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	0.105	105	0.108	108	70-130	3	35	mg/kg	02.13.20 12:09	
Toluene	<0.00200	0.100	0.103	103	0.105	105	70-130	2	35	mg/kg	02.13.20 12:09	
Ethylbenzene	<0.00200	0.100	0.0999	100	0.102	102	71-129	2	35	mg/kg	02.13.20 12:09	
m,p-Xylenes	<0.00400	0.200	0.206	103	0.209	105	70-135	1	35	mg/kg	02.13.20 12:09	
o-Xylene	<0.00200	0.100	0.102	102	0.104	104	71-133	2	35	mg/kg	02.13.20 12:09	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		104		104		70-130	%	02.13.20 12:09
4-Bromofluorobenzene	94		93		92		70-130	%	02.13.20 12:09

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3116480 — Matrix: Soil — Date Prep: 02.13.20
Parent Sample Id: 652249-001 — MS Sample Id: 652249-001 S — MSD Sample Id: 652249-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0196	0.980	1.01	103	1.02	102	70-130	1	35	mg/kg	02.13.20 12:50	
Toluene	<0.0196	0.980	0.933	95	0.933	93	70-130	0	35	mg/kg	02.13.20 12:50	
Ethylbenzene	<0.0196	0.980	0.832	85	0.835	84	71-129	0	35	mg/kg	02.13.20 12:50	
m,p-Xylenes	<0.0392	1.96	1.66	85	1.72	86	70-135	4	35	mg/kg	02.13.20 12:50	
o-Xylene	<0.0196	0.980	0.815	83	0.824	82	71-133	1	35	mg/kg	02.13.20 12:50	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		103		70-130	%	02.13.20 12:50
4-Bromofluorobenzene	89		107		70-130	%	02.13.20 12:50

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

652244 ~~652259~~

Chain of Custody

Work Order No: 652594 ~~652~~ au 2/13

XENCO LABORATORIES

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Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, Tx 79705	City, State ZIP:	
Phone:	(432) 236-3849	Email:	wmather@ltenv.com, dmoir@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 DI2 CTB	Turn Around	
Project Number:	012919141	Routine ☐	
P.O. Number:	Eddy	Rush: 24hr	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT

Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	1.0	Thermometer ID	TNM007
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	7

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	Sample Comments
FS03	s	2/12/2020	10:00	.5'	1	x	x	x	composite
FS04	s	2/12/2020	10:02	.5'	1	x	x	x	composite
FS05	s	2/12/2020	10:05	.5'	1	x	x	x	composite
FS06	s	2/12/2020	10:09	.5'	1	x	x	x	composite
FS07	s	2/12/2020	10:11	.5'	1	x	x	x	composite
FS08	s	2/12/2020	10:13	.5'	1	x	x	x	composite
FS09	s	2/12/2020	10:16	.5'	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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 [signature]	[signature]	2/13/20 8:00am	2 [signature]	[signature]	2/13/20 08:50
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 02.13.2020 08.50.00 AM

Work Order #: 652249

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

Temperature Measuring device used : T-NM-007

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 02.13.2020

Checklist reviewed by: Jessica Kramer Date: 02.13.2020

Jessica Kramer