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	NAB1921934485
District RP	2RP-5557
Facility ID	fAB1921933161
Application ID	pAB1921933249

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)* NAB1921934485
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.381936° Longitude -103.881954°

(NAD 83 in decimal degrees to 5 decimal places)

Site Name James Ranch Unit SWD riser #105 nearest JRU DI1 #161H	Site Type Salt Water Disposal line riser
Date Release Discovered 7/13/2019	API# *(if applicable)* 30-015-43607 (JRU DI1 #161H)

Unit Letter	Section	Township	Range	County
A	21	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)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 13.38	Volume Recovered (bbls) 0
	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 hole developed in the line riser due to corrosion. Fluid was released to pipeline ROW and pasture. The line was isolated until repair can be made. Additional third party resources have been retained to assist with remediation.

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Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NAB1921934485
District RP	2RP-5557
Facility ID	fAB1921933161
Application ID	pAB1921933249

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? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

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:

No free fluids remained to be recovered.

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: 7/19/2019
email: Kyle_Littrell@xtoenergy.com
Telephone: 432-221-7331

OCD Only

Received by: Amalia Bustamante
Date: 8/7/2019

Form C-141
Page 3

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5557
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

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Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5557
Facility ID	
Application ID	

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

Printed Name: _____Kyle Littrell_____ Title: ____SH&E Supervisor_____

Signature:_____ Date: __11/26/2019_____

email: _____Kyle_Littrell@xtoenergy.com_____ Telephone: ___432-221-7331_____

OCD Only

Received by: _____ Date: _____

Form C-141
Page 5

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	2RP-5557
Application ID	

Remediation Plan

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

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

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

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

☒ Extents of contamination must be fully delineated.

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 11/26/2019

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

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

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

November 26, 2019

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

RE: Deferral Request
James Ranch Unit SWD Riser #105
Remediation Permit Number 2RP-5557
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Deferral Request detailing soil sampling and excavation activities at the James Ranch Unit Salt Water Disposal (SWD) Riser #105 (Site) in Unit A, Section 21, Township 22 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to confirm the presence or absence of impacts to soils following a release of produced water at the Site. Based on the field observations, excavation activities, and laboratory analytical results of the soil sampling events, XTO is submitting this Deferral Request and requesting no further action for Remediation Permit (RP) Number 2RP-5557.

RELEASE BACKGROUND

On July 13, 2019, a hole developed in the line riser due to corrosion. Fluid was released to pipeline right-of-way (ROW) and pasture. The line released, 13.38 barrels (bbls) of produced water; no fluids were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on July 19, 2019, and was assigned Remediation Permit (RP) Number 2RP-5557 (Attachment 1).

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is C 03015, located approximately 3,662 feet southeast of the Site. The water well has a depth to groundwater of 262 feet bgs and a total depth of 1,316 feet bgs. Ground surface elevation at the water well location is 3,286 feet above mean sea level (AMSL), which is approximately 126 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 130 feet

west of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a high potential karst area.

CLOSURE CRITERIA

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

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

SITE ASSESSMENT, EXCAVATION, AND DELINEATION SOIL SAMPLING ACTIVITIES

On August 15, 2019, LTE personnel inspected the Site to evaluate the release extent. No surficial staining was observed within the release area; therefore, soil sample locations were selected based on field screening results and information provided on the C-141. LTE personnel collected five preliminary soil samples (SS01 through SS05) within the release extent from a depth of approximately 0.5 feet bgs to assess the lateral extent of soil impacts. The preliminary soil sample locations were mapped utilizing a handheld Global Positing System (GPS) unit and are depicted on Figure 2.

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

Based on laboratory analytical results for the preliminary soil samples, excavation of impacted soil appeared to be warranted. Photographic documentation was conducted during the Site visit. Photographs are included in Attachment 2.

On October 8 and October 15, 2019, LTE personnel returned to the Site to oversee soil assessment activities to delineate impacted soil. Boreholes were advanced via hand auger at eleven locations within and around the release area. Boreholes BH01 through BH11 were advanced to depths ranging from of 4 feet to 8 feet bgs. Delineation soil samples were collected

from each borehole at depths ranging from 1 foot to 8 feet bgs. Soil from the boreholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach© chloride QuanTab© test strips, respectively. Field screening results and observations for each borehole were logged on lithologic/soil sampling logs, which are included in Attachment 2. The delineation soil samples were collected, handled, and analyzed as described above at Xenco in Midland, Texas. The boreholes and delineation soil sample locations are depicted on Figure 3.

On October 14, 2019, LTE personnel was at the Site to oversee excavation of impacted soil as indicated by boreholing and field screening results. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples SW01 through SW06 were collected from the sidewalls of the excavations at depths ranging from ground surface to 10 feet bgs. Composite soil samples FS01 through FS03 were collected from the floor of the excavations at depths ranging from 7 feet to 10 feet bgs. The excavation soil samples were collected, handled, and analyzed as described above at Xenco in Midland, Texas. The excavation extent and soil sample locations are depicted on Figure 4.

The excavation extent measured approximately 1,500 square feet in area. A total of approximately 500 cubic yards of soil were removed from the excavation. The impacted soil was transported and properly disposed of at the R360 landfill facility located in Hobbs, New Mexico.

ANALYTICAL RESULTS

Laboratory analytical results indicated that chloride concentrations in preliminary soil samples SS03 through SS05 and delineation soil samples BH02, BH04, and BH05, collected at depths ranging from approximately 0.5 feet to 4 feet bgs, exceeded the Closure Criteria.

Based on the laboratory analytical results from the preliminary and delineation soil samples, impacted soil was excavated. Following excavation of impacted soil, confirmation soil samples were collected from the sidewalls and floor of the excavation. Laboratory analytical results indicated that benzene, BTEX, GRO and DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in excavation soil samples SW01 through SW04 and FS01 through FS03, but chloride concentrations exceeding the Closure Criteria were left in place in the area of excavation soil samples SW05 and SW06 at depths ranging from the ground surface to 10 feet bgs. Further excavation in these areas was not feasible for compliance with XTO safety policy regarding earth moving activities within 2 feet of active pipelines.

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

DEFERRAL REQUEST

A total of approximately 500 cubic yards of impacted soil were excavated from the Site; however, residual impacted soil was left in place for compliance with the XTO safety policy regarding earth moving activities within 2 feet of active pipelines.

Laboratory analytical results for excavation sidewall samples SW05 and SW06 collected from the final excavation extent indicated that soil with chloride concentrations exceeding the Closure Criteria was left in place within 2 feet of an active pipeline. The impacted soil remaining in place in these areas is delineated vertically and laterally by excavation soil samples SW01 through SW04 and FS01 through FS03 collected from the sidewalls and floor of the final excavation extent, and delineation soil samples BH01, BH03, BH06 through BH11, BH01A, BH03A through BH11A, and BH05B. An estimated 75 cubic yards of impacted soil remains in place surrounding sidewall samples SW05 and SW06, assuming a maximum 10-foot depth based on samples FS03 and SW04 collected at a maximum depth of 10 feet bgs that were compliant with the Closure Criteria.

Soil containing concentrations of chloride exceeding Closure Criteria in boreholes BH04 at 4 feet bgs and BH02 at 4 feet bgs was removed during the excavation. The excavation did not extend to the area represented by elevated chloride concentrations at BH05 at 4 feet bgs. The residual impacts could not be excavated due to the vicinity of the adjacent pipeline; however it is delineated vertically by soil samples collected deeper in BH05 and laterally by the excavation and boreholes BH09, BH10, and BH11. An estimated 99 cubic yards of impacted soil remains in place surrounding the pipeline at BH05, assuming a maximum 6 feet depth.

XTO requests to backfill the existing excavations and complete remediation during any future major construction/alteration or final plugging and abandonment, whichever occurs first. LTE and XTO attempted removal of impacted soil via track hoe and hydrovaccumm near the pipeline. XTO and LTE do not believe deferment will result in imminent risk to human health, the environment, or groundwater. No saturated soil remains in place. Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. XTO requests deferral of final remediation for RP Number 2RP-5557. 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 included as Attachment 1.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Carol Ann Whaley
Staff 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

Attachments:

Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Delineation Soil Sample Locations
Figure 4	Excavation Soil Sample Locations
Table 1	Soil Analytical Reports
Attachment 1	Initial/Final NMOCD Form C-141 (2RP-5557)
Attachment 2	Photographic Log
Attachment 3	Lithologic/Soil Sample Logs
Attachment 4	Laboratory Analytical Reports

FIGURES

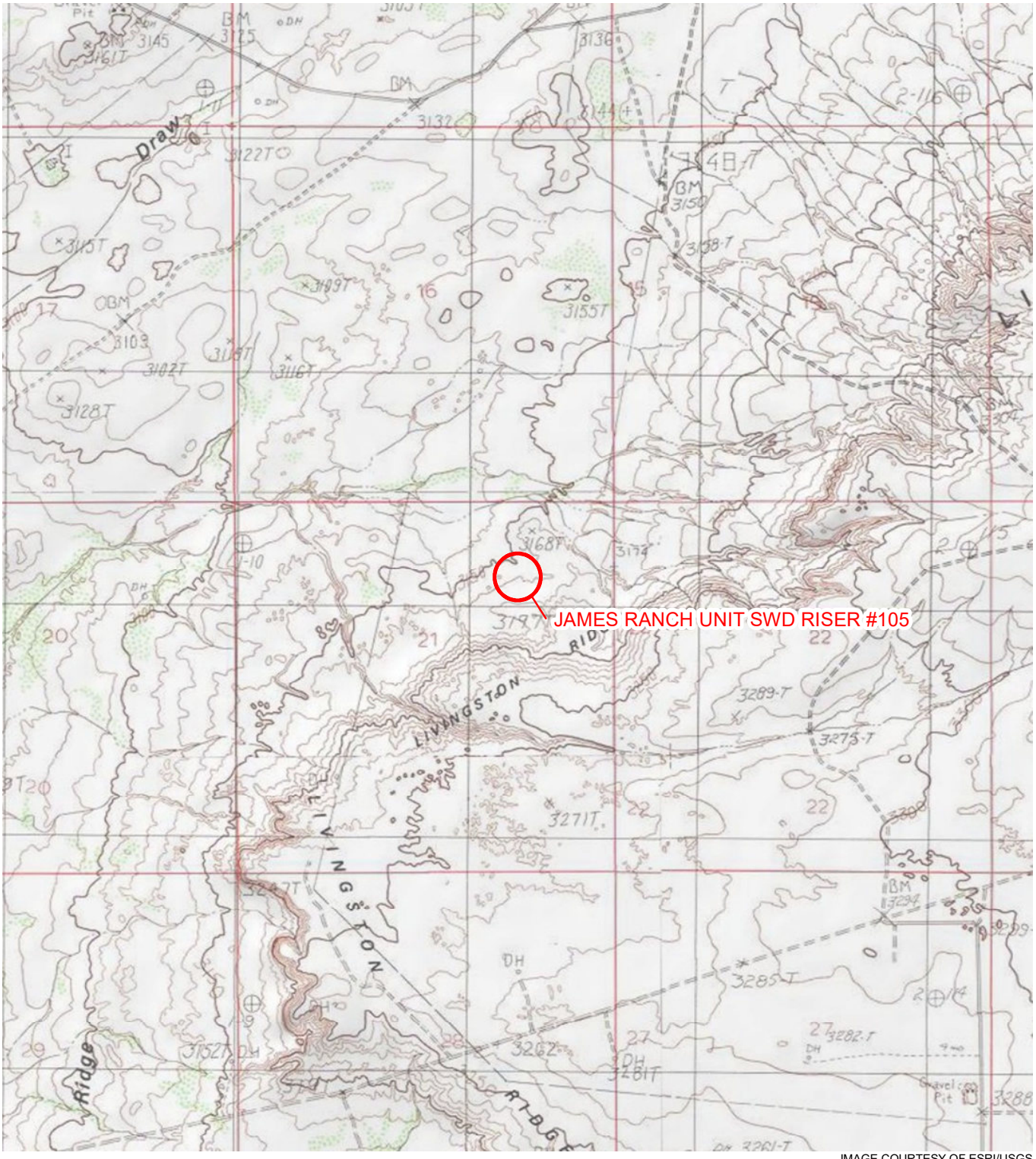


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

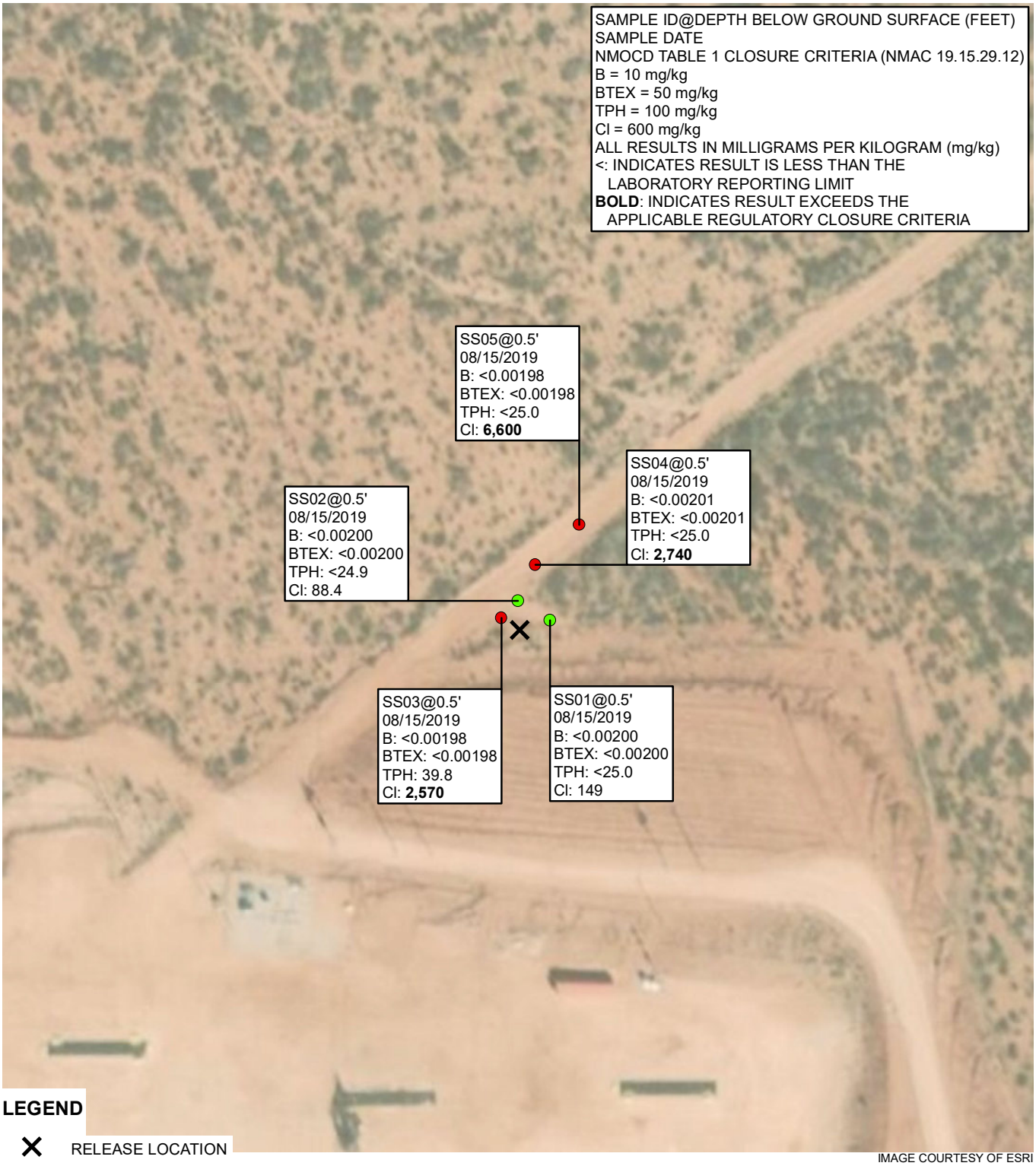
N

NEW MEXICO

NOTE: REMEDIATION PERMIT NUMBER 2RP-5557

FIGURE 1
SITE LOCATION MAP
JAMES RANCH UNIT SWD RISER #105
UNIT A SEC 21 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

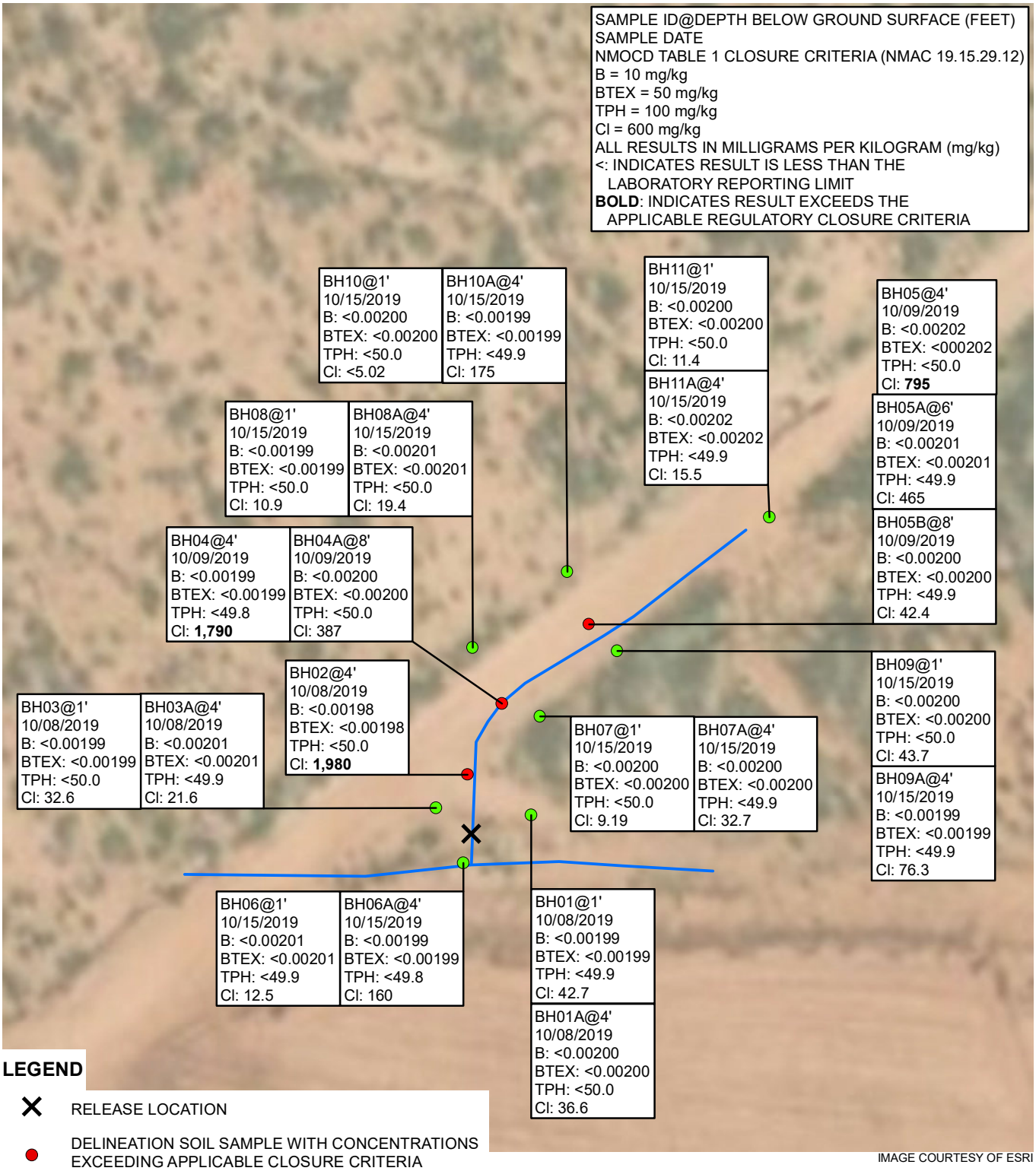
P:\XTO Energy\GIS\MXD\012919158_JRU SWD RISER #105 (JRU DI1 #161H)\012919158_FIG01_SL_5557.mxd



B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5557

FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT SWD RISER #105
UNIT A SEC 21 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

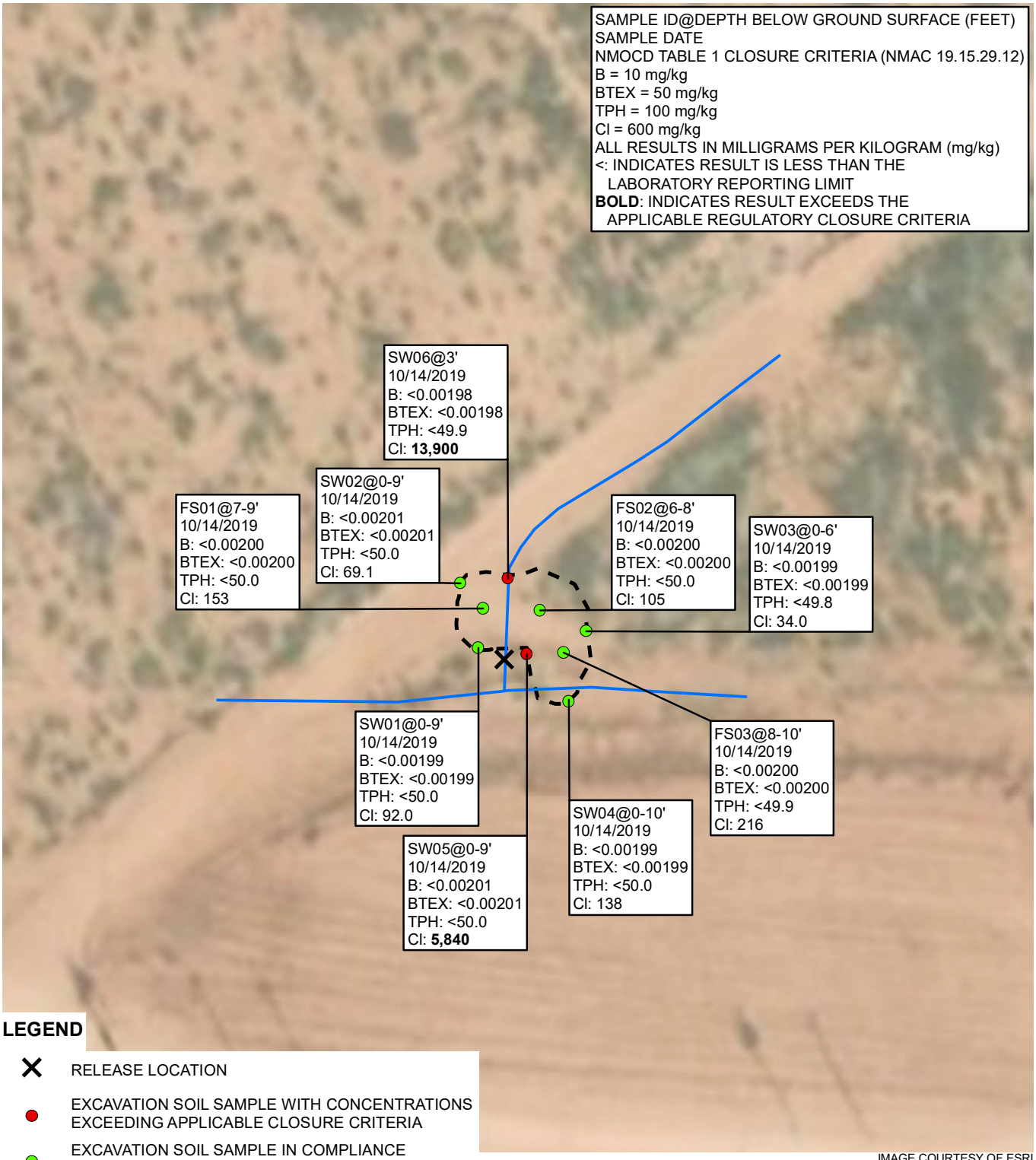
P:\XTO Energy\GIS\MXD\012919158_JRU SWD RISER #105 (JRU DI1 #161H)\012919158_FIG02_PRELIMINARY_5557.mxd



B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5557

FIGURE 3
DELINEATION SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT SWD RISER #105
UNIT A SEC 21 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919158_JRU SWD RISER #105 (JRU DI1 #161H)\012919158_FIG03_DELINEATION_5557.mxd



B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5557

FIGURE 4
EXCAVATION SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT SWD RISER #105
UNIT A SEC 21 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919158_JRU SWD RISER #105 (JRU DI1 #161H)\012919158_FIG04_EXCAVATION_5557.mxd

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS

JAMES RANCH UNIT SWD RISER #105
REMEDIATION PERMIT NUMBER 2RP-5557
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)
SS01	0.5	08/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<25.0	<25.0	<25.0	<25.0	<25.0	149
SS02	0.5	08/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<24.9	<24.9	<24.9	<24.9	<24.9	88.4
SS03	0.5	08/15/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<25.0	39.8	<25.0	39.8	39.8	**2,570**
SS04	0.5	08/15/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<25.0	<25.0	<25.0	<25.0	<25.0	**2,740**
SS05	0.5	08/15/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<25.0	<25.0	<25.0	<25.0	<25.0	**6,600**
BH01	1	10/08/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	42.7
BH01A	4	10/08/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	36.6
BH02	4	10/08/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	**1,980**
BH03	1	10/08/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	32.6
BH03A	4	10/08/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	21.6
BH04	4	10/09/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	**1,790**
BH04A	8	10/09/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	387
BH05	4	10/09/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	**795**
BH05A	6	10/09/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	465
BH05B	8	10/09/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	42.4
BH06	1	10/15/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	12.5
BH06A	4	10/15/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	160
BH07	1	10/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	9.19
BH07A	4	10/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	32.7
BH08	1	10/15/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	10.9
BH08A	4	10/15/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	19.4
BH09	1	10/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	43.7
BH09A	4	10/15/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	76.3
BH10	1	10/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	<5.02
BH10A	4	10/15/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	175
BH11	1	10/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	11.4
BH11A	4	10/15/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	15.5
SW01	0 - 9	10/14/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	92.0
SW02	0 - 9	10/14/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	69.1

TABLE 1
SOIL ANALYTICAL RESULTS

JAMES RANCH UNIT SWD RISER #105
REMEDIATION PERMIT NUMBER 2RP-5557
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)
SW03	0 - 6	10/14/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	34.0
SW04	0 - 10	10/14/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	138
SW05	0 - 9	10/14/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	**5,840**
SW06	3	10/14/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	**13,900**
FS01	7 - 9	10/14/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	153
FS02	6 - 8	10/14/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	105
FS03	8 - 10	10/14/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	216
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	NE	**100**	**600**

Notes:

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

ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-5557)

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	NAB1921934485
District RP	2RP-5557
Facility ID	fAB1921933161
Application ID	pAB1921933249

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)* NAB1921934485
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.381936° Longitude -103.881954°

(NAD 83 in decimal degrees to 5 decimal places)

Site Name James Ranch Unit SWD riser #105 nearest JRU DI1 #161H	Site Type Salt Water Disposal line riser
Date Release Discovered 7/13/2019	API# *(if applicable)* 30-015-43607 (JRU DI1 #161H)

Unit Letter	Section	Township	Range	County
A	21	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)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 13.38	Volume Recovered (bbls) 0
	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 hole developed in the line riser due to corrosion. Fluid was released to pipeline ROW and pasture. The line was isolated until repair can be made. Additional third party resources have been retained to assist with remediation.

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State of New Mexico
Oil Conservation Division

Incident ID	NAB1921934485
District RP	2RP-5557
Facility ID	fAB1921933161
Application ID	pAB1921933249

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? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

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:

No free fluids remained to be recovered.

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: 7/19/2019
email: Kyle_Littrell@xtoenergy.com
Telephone: 432-221-7331

OCD Only

Received by: Amalia Bustamante
Date: 8/7/2019

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5557
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5557
Facility ID	
Application ID	

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

Printed Name: _____Kyle Littrell_____ Title: ____SH&E Supervisor_____

Signature:_____ Date: __11/26/2019_____

email: _____Kyle_Littrell@xtoenergy.com_____ Telephone: ___432-221-7331_____

OCD Only

Received by: _____ Date: _____

Form C-141
Page 5

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	2RP-5557
Application ID	

Remediation Plan

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

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

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

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

☒ Extents of contamination must be fully delineated.

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 11/26/2019

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

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

ATTACHMENT 2: PHOTOGRAPHIC LOG

Eastern view of release area during site assessment activities.

Project: 012919158	XTO Energy, Inc. James Ranch Unit SWD #105	LTE Advancing Opportunity
October 8, 2019	Photographic Log	

Northern view of final excavation extent during confirmation soil sampling activities.

Project: 012919158	XTO Energy, Inc. James Ranch Unit SWD #105	Advancing Opportunity
October 15, 2019	Photographic Log	

ATTACHMENT 3: LITHOLOGIC SOIL SAMPLE LOGS

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

Identifier:	Date:
BH01	10/8/19
Project Name: JRU swD Riser 105	RP Number: 2RP-5557
Logged By: GG	Method: HA
Hole Diameter:	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:
Field Screening: CTS/PID
Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1120 D	<180	0.0	N	BH01	1			silt, brown, low plasticity
1125 D	<180	0	N		2			silt, brown, low plasticity
1130 D	<180	0	N		3			silt, reddish brown, low plasticity
1135 D	<180	0	N	BH01A	4			silt, reddish brown, low plasticity
					6			
					8			
					10			
					12			
					14			
					16			
					18			
					20			
					22			

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

Identifier:	Date:
BH02	10/08/19
Project Name: JRU SWD Riser 105	RP Number: 2RP5557
Logged By: GG	Method: HA
Lat/Long:	Field Screening: CTS/PID
Hole Diameter:	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1155	D	<180	0	N		1			brown, silt, med plasticity
1200	D	<180	0	N		2			reddish brown, med plasticity
1205	D	1848	0	N		3			reddish brown, med plasticity, silt
1210	D	3488	0	N	BH02	4			Dark reddish brown silt, high plasticity
						6			
						8			
						10			
						12			
						14			
						16			
						18			
						20			
						22			

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
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Identifier:	Date:
BH03	10/09/19
Project Name: JRU SWD Riser 105	RP Number: 2RP 5557
Logged By: GG	Method: HA
Lat/Long:	Field Screening: CTS/PID
Hole Diameter:	Total Depth: 4

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1230	D	2150	0	N	BH03	1			reddish brown, silt, low plasticity
1235	D	2180	0	N		2			reddish brown, silt, low plasticity
1240	D	2180	0	N		3			reddish brown, mod plasticity
1245	D	2180	0	N	BH03A	4			reddish brown silt, med plasticity
						6			
						8			
						10			
						12			
						14			
						16			
						18			
						20			
						22			

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
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Identifier:	Date:
BH04	10/08/19 - 10/09/19
Project Name: JRU SWD Riser 105	RP Number: 2RP-5557
Logged By: GG	Method: HA
Hole Diameter:	Total Depth: 8'
Lat/Long:	Field Screening: LTS/PID

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1300	D	>3488	0	N		1			reddish brown, silt, high plasticity
1305	D	>3488	0	N		2			reddish brown silt, med plasticity
1310 10/9	D	386	0	N		3			light reddish brown silt, low plasticity
1105	D	2632	0	N	BH04	4			Brown silt, low plasticity
1110	D	991	0	N		6			Brown silt, low plasticity
1115	D	991	0	N		7			Brown silt, low plasticity
1120	D	616	0	N		8			Brown silt, low plasticity
						10			
						12			
						14			
						16			
						18			
						20			
						22			

LT Environmental, Inc.
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Carlsbad, New Mexico 88220
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Identifier: BH05	Date: 10/08-10/09/2019
Project Name: 2RP5557	RP Number: 2RP5557
Logged By: GG	Method: HA
Lat/Long:	Field Screening: CTS/PID
Hole Diameter:	Total Depth: 7

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1330	>3488	0			1			Red silt, high plasticity
1335	296	0			2			reddish brown, silt, low plasticity
1340	991	0			3			reddish brown silt, low plasticity
1345	991	0			4			Brown silt, low plasticity
10/9/19 1350	991	0			5			Brown silt, low plasticity
1355	616	0			6			Brown silt, med Plasticity
1400	386	0			7			Brown silt, med plasticity
					8			
					10			
					12			
					14			
					16			
					18			
					20			
					22			

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
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Identifier:	Date:
BH06	10/15/19
Project Name:	**RP Number:**
JRUSWD Riser 105	2RP-5557
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: GG / Method: HA
Lat/Long: / Field Screening: CTS/PID	Hole Diameter: / Total Depth: 4'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1015 D	<180	0	N		0–1			Reddish brown silt/sand, low plasticity
1020 D	<180	0	N		1–2			Reddish brown, silt, med plasticity
1025 D	<180	0	N		2–3			Brown silt, med plasticity
1030 D	<180	6	N		3–4			Brown silt, high plasticity
					4–5			
					5–6			
					6–7			
					7–8			
					8–9			
					9–10			
					10–11			
					11–12			

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

Identifier:	Date:
BH07	10/15/19
Project Name: JRusw D Riser 105	RP Number: 2RP-5557
Logged By: GG	Method: HA
Lat/Long:	Field Screening: CTS/PID
Hole Diameter:	Total Depth:

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1100	D	<160	0	N	BH07	0–1			Reddish brown, silt, medplasticity loam
1110	D	<160	0	N		2			Reddish brown, silt loam, medplasticity
1115	D	<160	0	N		3			brown, silt loam, medplasticity
1120	D	<160	0	N	BH07A	4			brown, silt loam, medplasticity
						5			
						6			
						7			
						8			
						9			
						10			

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

Identifier: BH08	Date: 10/15/2019
Project Name: SRUSWD Riser 105	RP Number: 2RP-5557
Logged By: GG	Method: HA
Hole Diameter:	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: CTS/PID

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1230 D	<180	0	N	BH08	1			Reddish brown, silt loam, high plasticity
1235 D	<180	0	N		2			Reddish brown silt loam, med plasticity
1240 D	<180	0	N		3			brown, silt loam, med plasticity
1245 D	<180	0	N	BH08A	4			brown, silt loam, low plasticity
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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

Identifier:	Date:
BH09	10/15/2019
Project Name:	**RP Number:**
JRU SWD Riser 105	2RP-5557
Logged By: GG	Method: HA
Hole Diameter:	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: CTS/PID

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1300 D	<160	0	N	BH09	0–1			Reddish brown silt loam, medplasticity
1305 D	<160	0	N		2			brown silt loam, medplasticity
1310 D	<160	0	N		3			brown silt loam, medplasticity
1315 D	<180	0	N	BH09A	4			brown silt loam, low plasticity
					5–12			

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

Identifier: BH10	Date: 10/15/2019
Project Name: JRUSWD Riser 105	RP Number: 2RP-5557
Logged By: GG	Method: HA
Hole Diameter: .	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: CTS/PID

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1330 D	<180	0	N	BH10.	0–1			Reddish Brown, silt loam, med plasticity
1335 D	<180	0	N		1–2			Reddish Brown, silt loam, med plasticity
1340 D	<180	0	N		2–3			Brown silt loam, low plasticity
1345 D	<180	0	N	BH10A	3–4			Brown silt loam, low plasticity
					4–5			
					5–6			
					6–7			
					7–8			
					8–9			
					9–10			
					10–11			
					11–12			

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

Identifier:	Date:
BH11	10/15/2019
Project Name:	**RP Number:**
JRU SWD Riser 105	2RP-5557
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: GG / Method: HA
Lat/Long:	Field Screening: CTS/PID / Hole Diameter: / Total Depth: 4'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1405 D	<180	0	N	BH11	0–1			light Reddish brown Silt loam med plasticity
1410 D	<180	0	N		2			Brown, silt loam, med plasticity
1415 D	<180	0	N		3			Brown silt loam, med plasticity
1420 D	<180	0	N	BH11A	4			Brown silt loam low plasticity
					5–12			

ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS

Analytical Report 634301

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU SWD Riser #105

21-AUG-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), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

21-AUG-19

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

Reference: XENCO Report No(s): **634301**
JRU SWD Riser #105
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) 634301. 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. 634301 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 634301

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS 01	S	08-15-19 13:50	.5 ft	634301-001
SS 02	S	08-15-19 13:55	.5 ft	634301-002
SS 03	S	08-15-19 14:05	.5 ft	634301-003
SS 04	S	08-15-19 14:10	.5 ft	634301-004
SS 05	S	08-15-19 14:15	.5 ft	634301-005

CASE NARRATIVE

Client Name: LT Environmental, Inc.
Project Name: JRU SWD Riser #105

Project ID:
Work Order Number(s): *634301*

Report Date: *21-AUG-19*
Date Received: *08/15/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3099158 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 634291-001 S,634291-001 SD,634301-001.

Certificate of Analysis Summary 634301

LT Environmental, Inc., Arvada, CO

Project Name: JRU SWD Riser #105

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Aug-15-19 04:45 pm

Report Date: 21-AUG-19

Project Manager: Jessica Kramer

Analysis Requested																
	Lab Id:	634301-001		634301-002		634301-003		634301-004		634301-005						
	Field Id:	SS 01		SS 02		SS 03		SS 04		SS 05						
	Depth:	.5- ft		.5- ft		.5- ft		.5- ft		.5- ft						
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL						
	Sampled:	Aug-15-19 13:50		Aug-15-19 13:55		Aug-15-19 14:05		Aug-15-19 14:10		Aug-15-19 14:15						
BTEX by EPA 8021B **SUB: T104704400-18-16**	***Extracted:***	Aug-17-19 12:30		Aug-17-19 12:30		Aug-17-19 12:30		Aug-17-19 12:30		Aug-17-19 12:30						
	Analyzed:	Aug-20-19 06:54		Aug-20-19 07:14		Aug-20-19 07:34		Aug-20-19 07:54		Aug-20-19 09:12						
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL					
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00198	0.00198					
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00198	0.00198					
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00198	0.00198					
m,p-Xylenes		<0.00399	0.00399	<0.00399	0.00399	<0.00397	0.00397	<0.00402	0.00402	<0.00397	0.00397					
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00198	0.00198					
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00198	0.00198					
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00198	0.00198					
Chloride by EPA 300 **SUB: T104704400-18-16**	***Extracted:***	Aug-19-19 12:10		Aug-19-19 12:10		Aug-19-19 12:10		Aug-19-19 12:10		Aug-19-19 12:10						
	Analyzed:	Aug-19-19 15:21		Aug-19-19 15:27		Aug-19-19 15:44		Aug-19-19 15:50		Aug-19-19 15:56						
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL					
Chloride		149	25.2	88.4	50.1	2570	24.9	2740	50.5	6600	50.5					
TPH by SW8015 Mod **SUB: T104704400-18-16**	***Extracted:***	Aug-19-19 13:00		Aug-19-19 13:00		Aug-19-19 13:00		Aug-19-19 15:08		Aug-19-19 15:08						
	Analyzed:	Aug-20-19 05:11		Aug-20-19 06:09		Aug-20-19 06:28		Aug-21-19 07:21		Aug-21-19 07:43						
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL					
Gasoline Range Hydrocarbons (GRO)		<25.0	25.0	<24.9	24.9	<25.0	25.0	<25.0	25.0	<25.0	25.0					
Diesel Range Organics (DRO)		<25.0	25.0	<24.9	24.9	39.8	25.0	<25.0	25.0	<25.0	25.0					
Motor Oil Range Hydrocarbons (MRO)		<25.0	25.0	<24.9	24.9	<25.0	25.0	<25.0	25.0	<25.0	25.0					
Total TPH		<25.0	25.0	<24.9	24.9	39.8	25.0	<25.0	25.0	<25.0	25.0					
Total GRO-DRO		<25.0	25.0	<24.9	24.9	39.8	25.0	<25.0	25.0	<25.0	25.0					

Jessica Kramer
Project Assistant

Certificate of Analytical Results 634301

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SS 01**	Matrix:	Soil	Date Received:	08.15.19 16.45
Lab Sample Id:	634301-001	Date Collected:	08.15.19 13.50	Sample Depth:	.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.19.19 12.10	Basis:	Wet Weight
Seq Number:	3099008			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**149**	25.2	mg/kg	08.19.19 15.21		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.19.19 13.00	Basis:	Wet Weight
Seq Number:	3099047			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	08.20.19 05.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.20.19 05.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	08.20.19 05.11	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	08.20.19 05.11	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	08.20.19 05.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	08.20.19 05.11	
o-Terphenyl	84-15-1	95	%	70-135	08.20.19 05.11	

Certificate of Analytical Results 634301

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SS 01**	Matrix:	Soil	Date Received:	08.15.19 16.45
Lab Sample Id:	634301-001	Date Collected:	08.15.19 13.50	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	AMB	Date Prep:	08.17.19 12.30	Basis:	Wet Weight
Seq Number:	3099158			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.20.19 06.54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.20.19 06.54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.20.19 06.54	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.20.19 06.54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.20.19 06.54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.20.19 06.54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.20.19 06.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	140	%	70-130	08.20.19 06.54	**
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.20.19 06.54	

Certificate of Analytical Results 634301

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SS 02**	Matrix:	Soil	Date Received:	08.15.19 16.45
Lab Sample Id:	634301-002	Date Collected:	08.15.19 13.55	Sample Depth:	.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.19.19 12.10	Basis:	Wet Weight
Seq Number:	3099008			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**88.4**	50.1	mg/kg	08.19.19 15.27		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.19.19 13.00	Basis:	Wet Weight
Seq Number:	3099047			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	08.20.19 06.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	08.20.19 06.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	08.20.19 06.09	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	08.20.19 06.09	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	08.20.19 06.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	08.20.19 06.09	
o-Terphenyl	84-15-1	101	%	70-135	08.20.19 06.09	

Certificate of Analytical Results 634301

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SS 02**	Matrix:	Soil	Date Received:	08.15.19 16.45
Lab Sample Id:	634301-002	Date Collected:	08.15.19 13.55	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	AMB	Date Prep:	08.17.19 12.30	Basis:	Wet Weight
Seq Number:	3099158			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.20.19 07.14	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.20.19 07.14	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.20.19 07.14	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.20.19 07.14	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.20.19 07.14	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.20.19 07.14	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.20.19 07.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	08.20.19 07.14	
4-Bromofluorobenzene	460-00-4	109	%	70-130	08.20.19 07.14	

Certificate of Analytical Results 634301

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SS 03**	Matrix:	Soil	Date Received:	08.15.19 16.45
Lab Sample Id:	634301-003	Date Collected:	08.15.19 14.05	Sample Depth:	.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.19.19 12.10	Basis:	Wet Weight
Seq Number:	3099008			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2570**	24.9	mg/kg	08.19.19 15.44		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.19.19 13.00	Basis:	Wet Weight
Seq Number:	3099047			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	08.20.19 06.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	**39.8**	25.0	mg/kg	08.20.19 06.28		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	08.20.19 06.28	U	1
Total TPH	PHC635	**39.8**	25.0	mg/kg	08.20.19 06.28		1
Total GRO-DRO	PHC628	**39.8**	25.0	mg/kg	08.20.19 06.28		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	08.20.19 06.28	
o-Terphenyl	84-15-1	97	%	70-135	08.20.19 06.28	

Certificate of Analytical Results 634301

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SS 03**	Matrix:	Soil	Date Received:	08.15.19 16.45
Lab Sample Id:	634301-003	Date Collected:	08.15.19 14.05	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	AMB	Date Prep:	08.17.19 12.30	Basis:	Wet Weight
Seq Number:	3099158			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.20.19 07.34	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.20.19 07.34	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.20.19 07.34	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.20.19 07.34	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.20.19 07.34	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.20.19 07.34	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.20.19 07.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	123	%	70-130	08.20.19 07.34	
1,4-Difluorobenzene	540-36-3	79	%	70-130	08.20.19 07.34	

Certificate of Analytical Results 634301

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SS 04**	Matrix:	Soil	Date Received:	08.15.19 16.45
Lab Sample Id:	634301-004	Date Collected:	08.15.19 14.10	Sample Depth:	.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.19.19 12.10	Basis:	Wet Weight
Seq Number:	3099008			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2740**	50.5	mg/kg	08.19.19 15.50		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.19.19 15.08	Basis:	Wet Weight
Seq Number:	3099194			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	08.21.19 07.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.21.19 07.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	08.21.19 07.21	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	08.21.19 07.21	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	08.21.19 07.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	08.21.19 07.21	
o-Terphenyl	84-15-1	109	%	70-135	08.21.19 07.21	

Certificate of Analytical Results 634301

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SS 04**	Matrix:	Soil	Date Received:	08.15.19 16.45
Lab Sample Id:	634301-004	Date Collected:	08.15.19 14.10	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	AMB	Date Prep:	08.17.19 12.30	Basis:	Wet Weight
Seq Number:	3099158			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.20.19 07.54	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.20.19 07.54	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.20.19 07.54	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.20.19 07.54	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.20.19 07.54	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.20.19 07.54	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.20.19 07.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	123	%	70-130	08.20.19 07.54	
1,4-Difluorobenzene	540-36-3	83	%	70-130	08.20.19 07.54	

Certificate of Analytical Results 634301

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SS 05**	Matrix:	Soil	Date Received:	08.15.19 16.45
Lab Sample Id:	634301-005	Date Collected:	08.15.19 14.15	Sample Depth:	.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	08.19.19 12.10	Basis:	Wet Weight
Seq Number:	3099008			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6600**	50.5	mg/kg	08.19.19 15.56		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	08.19.19 15.08	Basis:	Wet Weight
Seq Number:	3099194			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	08.21.19 07.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.21.19 07.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	08.21.19 07.43	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	08.21.19 07.43	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	08.21.19 07.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	08.21.19 07.43	
o-Terphenyl	84-15-1	93	%	70-135	08.21.19 07.43	

Certificate of Analytical Results 634301

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SS 05**	Matrix:	Soil	Date Received:	08.15.19 16.45
Lab Sample Id:	634301-005	Date Collected:	08.15.19 14.15	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	AMB	Date Prep:	08.17.19 12.30	Basis:	Wet Weight
Seq Number:	3099158			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.20.19 09.12	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.20.19 09.12	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.20.19 09.12	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.20.19 09.12	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.20.19 09.12	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.20.19 09.12	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.20.19 09.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.20.19 09.12	
4-Bromofluorobenzene	460-00-4	99	%	70-130	08.20.19 09.12	

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 634301

LT Environmental, Inc.

JRU SWD Riser #105

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3099008 — Matrix: Solid — Date Prep: 08.19.19
MB Sample Id: 7684488-1-BLK — LCS Sample Id: 7684488-1-BKS — LCSD Sample Id: 7684488-1-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	245	98	240	96	90-110	2	20	mg/kg	08.19.19 14:40	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3099008 — Matrix: Soil — Date Prep: 08.19.19
Parent Sample Id: 634340-001 — MS Sample Id: 634340-001 S — MSD Sample Id: 634340-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	75.1	251	351	110	351	110	90-110	0	20	mg/kg	08.19.19 14:58	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3099008 — Matrix: Soil — Date Prep: 08.19.19
Parent Sample Id: 634403-001 — MS Sample Id: 634403-001 S — MSD Sample Id: 634403-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	14.6	248	285	109	284	109	90-110	0	20	mg/kg	08.19.19 16:19	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3099047 — Matrix: Solid — Date Prep: 08.19.19
MB Sample Id: 7684493-1-BLK — LCS Sample Id: 7684493-1-BKS — LCSD Sample Id: 7684493-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	959	96	936	94	70-135	2	20	mg/kg	08.20.19 04:33	
Diesel Range Organics (DRO)	<25.0	1000	1000	100	977	98	70-135	2	20	mg/kg	08.20.19 04:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		122		119		70-135	%	08.20.19 04:33
o-Terphenyl	100		103		100		70-135	%	08.20.19 04:33

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

QC Summary 634301

LT Environmental, Inc.

JRU SWD Riser #105

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3099194 — Matrix: Solid — Date Prep: 08.19.19
MB Sample Id: 7684522-1-BLK — LCS Sample Id: 7684522-1-BKS — LCSD Sample Id: 7684522-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	859	86	879	88	70-135	2	20	mg/kg	08.20.19 22:59	
Diesel Range Organics (DRO)	<25.0	1000	901	90	1070	107	70-135	17	20	mg/kg	08.20.19 22:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	89		77		97		70-135	%	08.20.19 22:59
o-Terphenyl	98		81		106		70-135	%	08.20.19 22:59

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3099047 — Matrix: Soil — Date Prep: 08.19.19
Parent Sample Id: 634301-001 — MS Sample Id: 634301-001 S — MSD Sample Id: 634301-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	973	97	976	98	70-135	0	20	mg/kg	08.20.19 05:30	
Diesel Range Organics (DRO)	<25.0	998	1020	102	1030	103	70-135	1	20	mg/kg	08.20.19 05:30	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		118		70-135	%	08.20.19 05:30
o-Terphenyl	105		106		70-135	%	08.20.19 05:30

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3099194 — Matrix: Soil — Date Prep: 08.20.19
Parent Sample Id: 634513-061 — MS Sample Id: 634513-061 S — MSD Sample Id: 634513-061 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	838	84	847	85	70-135	1	20	mg/kg	08.21.19 00:04	
Diesel Range Organics (DRO)	<25.0	998	990	99	964	97	70-135	3	20	mg/kg	08.21.19 00:04	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		89		70-135	%	08.21.19 00:04
o-Terphenyl	97		94		70-135	%	08.21.19 00:04

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 634301

LT Environmental, Inc.

JRU SWD Riser #105

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3099158 | Matrix: Solid | Date Prep: 08.17.19
MB Sample Id: 7684441-1-BLK | LCS Sample Id: 7684441-1-BKS | LCSD Sample Id: 7684441-1-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	0.0898	90	0.0909	91	70-130	1	35	mg/kg	08.20.19 02:53	
Toluene	<0.000456	0.100	0.0945	95	0.0982	98	70-130	4	35	mg/kg	08.20.19 02:53	
Ethylbenzene	<0.00200	0.100	0.0946	95	0.102	102	70-130	8	35	mg/kg	08.20.19 02:53	
m,p-Xylenes	<0.00101	0.200	0.181	91	0.196	98	70-130	8	35	mg/kg	08.20.19 02:53	
o-Xylene	<0.000344	0.100	0.0951	95	0.103	103	70-130	8	35	mg/kg	08.20.19 02:53	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		95		95		70-130	%	08.20.19 02:53
4-Bromofluorobenzene	102		107		109		70-130	%	08.20.19 02:53

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3099158 | Matrix: Soil | Date Prep: 08.17.19
Parent Sample Id: 634291-001 | MS Sample Id: 634291-001 S | MSD Sample Id: 634291-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.00139	0.0998	0.0611	60	0.0563	55	70-130	8	35	mg/kg	08.20.19 03:33	X
Toluene	0.0373	0.0998	0.0644	27	0.0547	17	70-130	16	35	mg/kg	08.20.19 03:33	X
Ethylbenzene	0.0180	0.0998	0.0518	34	0.0291	11	70-130	56	35	mg/kg	08.20.19 03:33	XF
m,p-Xylenes	0.0673	0.200	0.0652	0	0.0640	0	70-130	2	35	mg/kg	08.20.19 03:33	X
o-Xylene	0.107	0.0998	0.118	11	0.111	4	70-130	6	35	mg/kg	08.20.19 03:33	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		103		70-130	%	08.20.19 03:33
4-Bromofluorobenzene	186	**	207	**	70-130	%	08.20.19 03:33

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

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: 603301

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
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432.704.5178	Email:	ggreen@ltenv.com ; dmoir@ltenv.com

Work Order Comments

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

Project Name:	JRU SWD Riser #105	Turn Around	
Project Number:		Routine	☑
P.O. Number:	ZRP-5557	Rush:	
Sampler's Name:	Garrett Green	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	Ice	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)
SS01	S	8/15/19	1350	.5'	1	X	X	X
SS02			1355		1			
SS03			1405		1			
SS04			1410		1			
SS05			1415		1			

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

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			8/15/19 16:45	2		
3				4		
5				6		

Rev. Date 051418 Rev. 2018.1

Inter-Office Shipment

IOS Number **46438**

Date/Time: 08/16/19 11:23

Lab# From: **Carlsbad**

Lab# To: **Midland**

Created by: Elizabeth Mcclellan

Delivery Priority:

Air Bill No.: 7760 0892 0480

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
634301-001	S	SS 01	08/15/19 13:50	SW8015MOD_NM	TPH by SW8015 Mod	08/21/19	08/29/19	JKR	GRO-DRO PHCC10C28 PI	
634301-001	S	SS 01	08/15/19 13:50	E300_CL	Chloride by EPA 300	08/21/19	02/11/20	JKR	CL	
634301-001	S	SS 01	08/15/19 13:50	SW8021B	BTEX by EPA 8021B	08/21/19	08/29/19	JKR	BR4FBZ BZ BZME EBZ X	
634301-002	S	SS 02	08/15/19 13:55	SW8021B	BTEX by EPA 8021B	08/21/19	08/29/19	JKR	BR4FBZ BZ BZME EBZ X	
634301-002	S	SS 02	08/15/19 13:55	SW8015MOD_NM	TPH by SW8015 Mod	08/21/19	08/29/19	JKR	GRO-DRO PHCC10C28 PI	
634301-002	S	SS 02	08/15/19 13:55	E300_CL	Chloride by EPA 300	08/21/19	02/11/20	JKR	CL	
634301-003	S	SS 03	08/15/19 14:05	SW8015MOD_NM	TPH by SW8015 Mod	08/21/19	08/29/19	JKR	GRO-DRO PHCC10C28 PI	
634301-003	S	SS 03	08/15/19 14:05	SW8021B	BTEX by EPA 8021B	08/21/19	08/29/19	JKR	BR4FBZ BZ BZME EBZ X	
634301-003	S	SS 03	08/15/19 14:05	E300_CL	Chloride by EPA 300	08/21/19	02/11/20	JKR	CL	
634301-004	S	SS 04	08/15/19 14:10	SW8015MOD_NM	TPH by SW8015 Mod	08/21/19	08/29/19	JKR	GRO-DRO PHCC10C28 PI	
634301-004	S	SS 04	08/15/19 14:10	E300_CL	Chloride by EPA 300	08/21/19	02/11/20	JKR	CL	
634301-004	S	SS 04	08/15/19 14:10	SW8021B	BTEX by EPA 8021B	08/21/19	08/29/19	JKR	BR4FBZ BZ BZME EBZ X	
634301-005	S	SS 05	08/15/19 14:15	SW8021B	BTEX by EPA 8021B	08/21/19	08/29/19	JKR	BR4FBZ BZ BZME EBZ X	
634301-005	S	SS 05	08/15/19 14:15	SW8015MOD_NM	TPH by SW8015 Mod	08/21/19	08/29/19	JKR	GRO-DRO PHCC10C28 PI	
634301-005	S	SS 05	08/15/19 14:15	E300_CL	Chloride by EPA 300	08/21/19	02/11/20	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 08/16/2019

Received By: Katie Lowe

Date Received: 08/17/2019 12:15

Cooler Temperature: 3.8

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 46438

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

Sent By: Elizabeth McClellan **Date Sent:** 08/16/2019 11:23 AM

Received By: Katie Lowe **Date Received:** 08/17/2019 12:15 PM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	3.8	
#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: Katie Lowe Date: 08/17/2019

Katie Lowe

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 08/15/2019 04:45:00 PM

Work Order #: 634301

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	1.6	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**No**	
#5 Custody Seals intact on sample bottles?	**No**	
#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: 08/16/2019

Checklist reviewed by: Jessica Kramer Date: 08/20/2019

Analytical Report 639592

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU SWD Slowriser 105

16-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)

16-OCT-19

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

Reference: XENCO Report No(s): **639592**
JRU SWD Slowriser 105
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) 639592. 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. 639592 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 639592

LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	10-08-19 11:20	1 ft	639592-001
BH01A	S	10-08-19 11:35	4 ft	639592-002
BH02	S	10-08-19 12:10	4 ft	639592-003
BH03	S	10-08-19 12:30	1 ft	639592-004
BH03A	S	10-08-19 12:45	4 ft	639592-005
BH04	S	10-09-19 11:05	4 ft	639592-006
BH04A	S	10-09-19 11:20	8 ft	639592-007
BH05	S	10-09-19 12:45	4 ft	639592-008
BH05A	S	10-09-19 12:55	6 ft	639592-009
BH05B	S	10-09-19 13:00	8 ft	639592-010

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU SWD Slowriser 105

Project ID:
Work Order Number(s): *639592*

Report Date: *16-OCT-19*
Date Received: *10/10/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3104153 Chloride by EPA 300
Lab Sample ID 639592-010 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 639592-008, -009, -010.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3104363 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Lab Sample ID 639592-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 639592-001, -002, -005, -006, -007, -008, -009, -010.
The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3104439 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 639592

LT Environmental, Inc., Arvada, CO

Project Name: JRU SWD Slowriser 105

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Oct-10-19 10:41 am

Report Date: 16-OCT-19

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	639592-001		639592-002		639592-003		639592-004		639592-005		639592-006	
	Field Id:	BH01		BH01A		BH02		BH03		BH03A		BH04	
	Depth:	1- ft		4- ft		4- ft		1- ft		4- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-08-19 11:20		Oct-08-19 11:35		Oct-08-19 12:10		Oct-08-19 12:30		Oct-08-19 12:45		Oct-09-19 11:05	
BTEX by EPA 8021B SUB: T104704400-19-19	***Extracted:***	Oct-14-19 17:00		Oct-14-19 17:00		Oct-15-19 15:02		Oct-15-19 15:02		Oct-14-19 17:00		Oct-14-19 17:00	
	Analyzed:	Oct-15-19 02:16		Oct-15-19 02:36		Oct-16-19 10:34		Oct-16-19 10:55		Oct-15-19 05:54		Oct-15-19 06:14	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199
Toluene		<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199
Ethylbenzene		<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199
m,p-Xylenes		<0.00398	0.00398	<0.00400	0.00400	<0.00397	0.00397	<0.00398	0.00398	<0.00402	0.00402	<0.00398	0.00398
o-Xylene		<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199
Total Xylenes		<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199
Total BTEX		<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199
Chloride by EPA 300 SUB: T104704400-19-19	***Extracted:***	Oct-11-19 18:00		Oct-11-19 18:00		Oct-11-19 18:00		Oct-11-19 18:00		Oct-11-19 18:00		Oct-11-19 18:00	
	Analyzed:	Oct-12-19 00:02		Oct-12-19 00:12		Oct-12-19 00:22		Oct-12-19 00:32		Oct-12-19 00:42		Oct-12-19 00:52	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		42.7	4.98	36.6	5.00	1980	50.3	32.6	4.96	21.6	5.00	1790	25.0
TPH by SW8015 Mod SUB: T104704400-19-19	***Extracted:***	Oct-13-19 12:00		Oct-13-19 12:00		Oct-13-19 12:00		Oct-13-19 12:00		Oct-13-19 12:00		Oct-13-19 12:00	
	Analyzed:	Oct-13-19 22:49		Oct-13-19 23:51		Oct-14-19 00:12		Oct-14-19 00:33		Oct-14-19 00:54		Oct-14-19 01:15	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<49.9	49.9	<50.0	50.0	<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8
Diesel Range Organics (DRO)		<49.9	49.9	<50.0	50.0	<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8
Motor Oil Range Hydrocarbons (MRO)		<49.9	49.9	<50.0	50.0	<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8
Total GRO-DRO		<49.9	49.9	<50.0	50.0	<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8
Total TPH		<49.9	49.9	<50.0	50.0	<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.8	49.8

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 639592

LT Environmental, Inc., Arvada, CO

Project Name: JRU SWD Slowriser 105

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Oct-10-19 10:41 am

Report Date: 16-OCT-19

Project Manager: Jessica Kramer

Analysis Requested															
	Lab Id:	639592-007		639592-008		639592-009		639592-010							
	Field Id:	BH04A		BH05		BH05A		BH05B							
	Depth:	8- ft		4- ft		6- ft		8- ft							
	Matrix:	SOIL		SOIL		SOIL		SOIL							
	Sampled:	Oct-09-19 11:20		Oct-09-19 12:45		Oct-09-19 12:55		Oct-09-19 13:00							
BTEX by EPA 8021B	***Extracted:***	Oct-14-19 17:00		Oct-14-19 17:00		Oct-14-19 17:00		Oct-14-19 17:00							
SUB: T104704400-19-19	***Analyzed:***	Oct-15-19 06:35		Oct-15-19 06:55		Oct-15-19 07:15		Oct-15-19 07:35							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Benzene		<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200						
Toluene		<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200						
Ethylbenzene		<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200						
m,p-Xylenes		<0.00399	0.00399	<0.00403	0.00403	<0.00402	0.00402	<0.00400	0.00400						
o-Xylene		<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200						
Total Xylenes		<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200						
Total BTEX		<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200						
Chloride by EPA 300	***Extracted:***	Oct-11-19 18:00		Oct-11-19 18:30		Oct-11-19 18:30		Oct-11-19 18:30							
SUB: T104704400-19-19	***Analyzed:***	Oct-12-19 01:02		Oct-12-19 02:02		Oct-12-19 02:42		Oct-12-19 04:22							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Chloride		387	50.0	795	5.00	465	4.98	42.4	5.00						
TPH by SW8015 Mod	***Extracted:***	Oct-13-19 12:00		Oct-13-19 12:00		Oct-13-19 12:00		Oct-13-19 12:00							
SUB: T104704400-19-19	***Analyzed:***	Oct-14-19 01:36		Oct-14-19 01:57		Oct-14-19 02:17		Oct-14-19 02:38							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.9	49.9						
Diesel Range Organics (DRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.9	49.9						
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.9	49.9						
Total GRO-DRO		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.9	49.9						
Total TPH		<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.9	49.9						

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

Jessica Kramer
Project Assistant

Certificate of Analytical Results 639592

LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH01**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-001	Date Collected:	10.08.19 11.20	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.11.19 18.00	Basis:	Wet Weight
Seq Number:	3104150			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**42.7**	4.98	mg/kg	10.12.19 00.02		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.13.19 12.00	Basis:	Wet Weight
Seq Number:	3104226			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.13.19 22.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.13.19 22.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.13.19 22.49	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.13.19 22.49	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.13.19 22.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	72	%	70-135	10.13.19 22.49	
o-Terphenyl	84-15-1	75	%	70-135	10.13.19 22.49	

Certificate of Analytical Results 639592

LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH01**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-001	Date Collected:	10.08.19 11.20	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	10.14.19 17.00	Basis:	Wet Weight
Seq Number:	3104363			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.15.19 02.16	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.15.19 02.16	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.15.19 02.16	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.15.19 02.16	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.15.19 02.16	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.15.19 02.16	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.15.19 02.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	122	%	70-130	10.15.19 02.16	
1,4-Difluorobenzene	540-36-3	81	%	70-130	10.15.19 02.16	

Certificate of Analytical Results 639592

LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH01A**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-002	Date Collected:	10.08.19 11.35	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.11.19 18.00	Basis:	Wet Weight
Seq Number:	3104150			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**36.6**	5.00	mg/kg	10.12.19 00.12		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.13.19 12.00	Basis:	Wet Weight
Seq Number:	3104226			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.13.19 23.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.13.19 23.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.13.19 23.51	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.13.19 23.51	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.13.19 23.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	70	%	70-135	10.13.19 23.51	
o-Terphenyl	84-15-1	71	%	70-135	10.13.19 23.51	

Certificate of Analytical Results 639592

LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH01A**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-002	Date Collected:	10.08.19 11.35	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	10.14.19 17.00	Basis:	Wet Weight
Seq Number:	3104363			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.15.19 02.36	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.15.19 02.36	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.15.19 02.36	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	10.15.19 02.36	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.15.19 02.36	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.15.19 02.36	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.15.19 02.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	70-130	10.15.19 02.36	
1,4-Difluorobenzene	540-36-3	91	%	70-130	10.15.19 02.36	

Certificate of Analytical Results 639592

LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH02**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-003	Date Collected:	10.08.19 12.10	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.11.19 18.00	Basis:	Wet Weight
Seq Number:	3104150			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1980**	50.3	mg/kg	10.12.19 00.22		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.13.19 12.00	Basis:	Wet Weight
Seq Number:	3104226			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.14.19 00.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.14.19 00.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.14.19 00.12	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.14.19 00.12	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.14.19 00.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	75	%	70-135	10.14.19 00.12	
o-Terphenyl	84-15-1	72	%	70-135	10.14.19 00.12	

Certificate of Analytical Results 639592

LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH02**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-003	Date Collected:	10.08.19 12.10	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	10.15.19 15.02	Basis:	Wet Weight
Seq Number:	3104439			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.16.19 10.34	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.16.19 10.34	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.16.19 10.34	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.16.19 10.34	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.16.19 10.34	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.16.19 10.34	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.16.19 10.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	85	%	70-130	10.16.19 10.34	
1,4-Difluorobenzene	540-36-3	86	%	70-130	10.16.19 10.34	

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LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH03**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-004	Date Collected:	10.08.19 12.30	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.11.19 18.00	Basis:	Wet Weight
Seq Number:	3104150			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**32.6**	4.96	mg/kg	10.12.19 00.32		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.13.19 12.00	Basis:	Wet Weight
Seq Number:	3104226			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.14.19 00.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.14.19 00.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.14.19 00.33	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.14.19 00.33	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.14.19 00.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	73	%	70-135	10.14.19 00.33	
o-Terphenyl	84-15-1	72	%	70-135	10.14.19 00.33	

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LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH03**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-004	Date Collected:	10.08.19 12.30	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	10.15.19 15.02	Basis:	Wet Weight
Seq Number:	3104439			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.16.19 10.55	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.16.19 10.55	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.16.19 10.55	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.16.19 10.55	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.16.19 10.55	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.16.19 10.55	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.16.19 10.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94	%	70-130	10.16.19 10.55	
1,4-Difluorobenzene	540-36-3	91	%	70-130	10.16.19 10.55	

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LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH03A**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-005	Date Collected:	10.08.19 12.45	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.11.19 18.00	Basis:	Wet Weight
Seq Number:	3104150			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**21.6**	5.00	mg/kg	10.12.19 00.42		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.13.19 12.00	Basis:	Wet Weight
Seq Number:	3104226			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.14.19 00.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.14.19 00.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.14.19 00.54	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.14.19 00.54	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.14.19 00.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	70	%	70-135	10.14.19 00.54	
o-Terphenyl	84-15-1	70	%	70-135	10.14.19 00.54	

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LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH03A**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-005	Date Collected:	10.08.19 12.45	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	10.14.19 17.00	Basis:	Wet Weight
Seq Number:	3104363			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.15.19 05.54	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.15.19 05.54	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.15.19 05.54	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.15.19 05.54	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.15.19 05.54	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.15.19 05.54	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.15.19 05.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	90	%	70-130	10.15.19 05.54	
1,4-Difluorobenzene	540-36-3	85	%	70-130	10.15.19 05.54	

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LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH04**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-006	Date Collected:	10.09.19 11.05	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.11.19 18.00	Basis:	Wet Weight
Seq Number:	3104150			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1790**	25.0	mg/kg	10.12.19 00.52		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.13.19 12.00	Basis:	Wet Weight
Seq Number:	3104226			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.14.19 01.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.14.19 01.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.14.19 01.15	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.14.19 01.15	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.14.19 01.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	70	%	70-135	10.14.19 01.15	
o-Terphenyl	84-15-1	71	%	70-135	10.14.19 01.15	

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LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH04**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-006	Date Collected:	10.09.19 11.05	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	10.14.19 17.00	Basis:	Wet Weight
Seq Number:	3104363			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.15.19 06.14	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.15.19 06.14	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.15.19 06.14	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.15.19 06.14	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.15.19 06.14	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.15.19 06.14	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.15.19 06.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	10.15.19 06.14	
1,4-Difluorobenzene	540-36-3	91	%	70-130	10.15.19 06.14	

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LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH04A**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-007	Date Collected:	10.09.19 11.20	Sample Depth:	8 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.11.19 18.00	Basis:	Wet Weight
Seq Number:	3104150			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**387**	50.0	mg/kg	10.12.19 01.02		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.13.19 12.00	Basis:	Wet Weight
Seq Number:	3104226			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.14.19 01.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.14.19 01.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.14.19 01.36	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.14.19 01.36	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.14.19 01.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	70	%	70-135	10.14.19 01.36	
o-Terphenyl	84-15-1	70	%	70-135	10.14.19 01.36	

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LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH04A**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-007	Date Collected:	10.09.19 11.20	Sample Depth:	8 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	10.14.19 17.00	Basis:	Wet Weight
Seq Number:	3104363			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.15.19 06.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.15.19 06.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.15.19 06.35	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.15.19 06.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.15.19 06.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.15.19 06.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.15.19 06.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	83	%	70-130	10.15.19 06.35	
1,4-Difluorobenzene	540-36-3	88	%	70-130	10.15.19 06.35	

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LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH05**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-008	Date Collected:	10.09.19 12.45	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.11.19 18.30	Basis:	Wet Weight
Seq Number:	3104153			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**795**	5.00	mg/kg	10.12.19 02.02		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.13.19 12.00	Basis:	Wet Weight
Seq Number:	3104226			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.14.19 01.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.14.19 01.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.14.19 01.57	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.14.19 01.57	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.14.19 01.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	70	%	70-135	10.14.19 01.57	
o-Terphenyl	84-15-1	71	%	70-135	10.14.19 01.57	

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LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH05**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-008	Date Collected:	10.09.19 12.45	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	10.14.19 17.00	Basis:	Wet Weight
Seq Number:	3104363			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.15.19 06.55	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.15.19 06.55	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.15.19 06.55	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.15.19 06.55	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.15.19 06.55	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.15.19 06.55	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.15.19 06.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	94	%	70-130	10.15.19 06.55	
4-Bromofluorobenzene	460-00-4	96	%	70-130	10.15.19 06.55	

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LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH05A**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-009	Date Collected:	10.09.19 12.55	Sample Depth:	6 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.11.19 18.30	Basis:	Wet Weight
Seq Number:	3104153			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**465**	4.98	mg/kg	10.12.19 02.42		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.13.19 12.00	Basis:	Wet Weight
Seq Number:	3104226			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.14.19 02.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.14.19 02.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.14.19 02.17	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.14.19 02.17	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.14.19 02.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	70	%	70-135	10.14.19 02.17	
o-Terphenyl	84-15-1	71	%	70-135	10.14.19 02.17	

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LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH05A**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-009	Date Collected:	10.09.19 12.55	Sample Depth:	6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	10.14.19 17.00	Basis:	Wet Weight
Seq Number:	3104363			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.15.19 07.15	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.15.19 07.15	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.15.19 07.15	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.15.19 07.15	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.15.19 07.15	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.15.19 07.15	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.15.19 07.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	92	%	70-130	10.15.19 07.15	
4-Bromofluorobenzene	460-00-4	94	%	70-130	10.15.19 07.15	

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LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH05B**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-010	Date Collected:	10.09.19 13.00	Sample Depth:	8 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.11.19 18.30	Basis:	Wet Weight
Seq Number:	3104153			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**42.4**	5.00	mg/kg	10.12.19 04.22		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.13.19 12.00	Basis:	Wet Weight
Seq Number:	3104226			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.14.19 02.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.14.19 02.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.14.19 02.38	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.14.19 02.38	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.14.19 02.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	72	%	70-135	10.14.19 02.38	
o-Terphenyl	84-15-1	75	%	70-135	10.14.19 02.38	

Certificate of Analytical Results 639592

LT Environmental, Inc., Arvada, CO

JRU SWD Slowriser 105

Sample Id:	**BH05B**	Matrix:	Soil	Date Received:	10.10.19 10.41
Lab Sample Id:	639592-010	Date Collected:	10.09.19 13.00	Sample Depth:	8 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	10.14.19 17.00	Basis:	Wet Weight
Seq Number:	3104363			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.15.19 07.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.15.19 07.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.15.19 07.35	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	10.15.19 07.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.15.19 07.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.15.19 07.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.15.19 07.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	87	%	70-130	10.15.19 07.35	
1,4-Difluorobenzene	540-36-3	89	%	70-130	10.15.19 07.35	

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 639592

LT Environmental, Inc.

JRU SWD Slowriser 105

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104150 — Matrix: Solid — Date Prep: 10.11.19
MB Sample Id: 7687994-1-BLK — LCS Sample Id: 7687994-1-BKS — LCSD Sample Id: 7687994-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	244	98	243	97	90-110	0	20	mg/kg	10.11.19 20:02	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104153 — Matrix: Solid — Date Prep: 10.11.19
MB Sample Id: 7687995-1-BLK — LCS Sample Id: 7687995-1-BKS — LCSD Sample Id: 7687995-1-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	242	97	244	98	90-110	1	20	mg/kg	10.12.19 01:42	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104150 — Matrix: Soil — Date Prep: 10.11.19
Parent Sample Id: 639585-002 — MS Sample Id: 639585-002 S — MSD Sample Id: 639585-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	262	253	507	97	502	95	90-110	1	20	mg/kg	10.11.19 20:33	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104150 — Matrix: Soil — Date Prep: 10.11.19
Parent Sample Id: 639585-003 — MS Sample Id: 639585-003 S — MSD Sample Id: 639585-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	320	248	553	94	555	95	90-110	0	20	mg/kg	10.11.19 23:02	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104153 — Matrix: Soil — Date Prep: 10.11.19
Parent Sample Id: 639592-008 — MS Sample Id: 639592-008 S — MSD Sample Id: 639592-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	795	250	1000	82	998	81	90-110	0	20	mg/kg	10.12.19 02:12	X

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 639592

LT Environmental, Inc.

JRU SWD Slowriser 105

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Seq Number: 3104153 Matrix: Soil Date Prep: 10.11.19
Parent Sample Id: 639592-010 MS Sample Id: 639592-010 S MSD Sample Id: 639592-010 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	250	299	103	298	102	90-110	0	20	mg/kg	10.12.19 04:32	

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
Seq Number: 3104226 Matrix: Solid Date Prep: 10.13.19
MB Sample Id: 7688030-1-BLK LCS Sample Id: 7688030-1-BKS LCSD Sample Id: 7688030-1-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	899	90	983	98	70-135	9	20	mg/kg	10.13.19 22:07	
Diesel Range Organics (DRO)	<15.0	1000	937	94	889	89	70-135	5	20	mg/kg	10.13.19 22:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	73		81		90		70-135	%	10.13.19 22:07
o-Terphenyl	82		79		91		70-135	%	10.13.19 22:07

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
Seq Number: 3104226 Matrix: Solid Date Prep: 10.13.19
MB Sample Id: 7688030-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.13.19 21:46	

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
Seq Number: 3104226 Matrix: Soil Date Prep: 10.13.19
Parent Sample Id: 639592-001 MS Sample Id: 639592-001 S MSD Sample Id: 639592-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	16.9	999	1010	99	853	84	70-135	17	20	mg/kg	10.13.19 23:09	
Diesel Range Organics (DRO)	<15.0	999	1000	100	878	88	70-135	13	20	mg/kg	10.13.19 23:09	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		77		70-135	%	10.13.19 23:09
o-Terphenyl	88		72		70-135	%	10.13.19 23:09

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 639592

LT Environmental, Inc.

JRU SWD Slowriser 105

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3104363 — Matrix: Solid — Date Prep: 10.14.19
MB Sample Id: 7688101-1-BLK — LCS Sample Id: 7688101-1-BKS — LCSD Sample Id: 7688101-1-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	0.0850	85	0.0838	84	70-130	1	35	mg/kg	10.15.19 10:14	
Toluene	<0.00200	0.100	0.0900	90	0.0869	87	70-130	4	35	mg/kg	10.15.19 10:14	
Ethylbenzene	<0.00200	0.100	0.0883	88	0.0849	85	70-130	4	35	mg/kg	10.15.19 10:14	
m,p-Xylenes	<0.00400	0.200	0.174	87	0.169	85	70-130	3	35	mg/kg	10.15.19 10:14	
o-Xylene	<0.00200	0.100	0.0940	94	0.0887	89	70-130	6	35	mg/kg	10.15.19 10:14	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		86		88		70-130	%	10.15.19 10:14
4-Bromofluorobenzene	92		93		91		70-130	%	10.15.19 10:14

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3104439 — Matrix: Solid — Date Prep: 10.15.19
MB Sample Id: 7688165-1-BLK — LCS Sample Id: 7688165-1-BKS — LCSD Sample Id: 7688165-1-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	0.0779	78	0.0822	82	70-130	5	35	mg/kg	10.15.19 08:54	
Toluene	<0.00200	0.100	0.0833	83	0.0880	88	70-130	5	35	mg/kg	10.15.19 08:54	
Ethylbenzene	<0.00200	0.100	0.0828	83	0.0873	87	70-130	5	35	mg/kg	10.15.19 08:54	
m,p-Xylenes	<0.00400	0.200	0.163	82	0.170	85	70-130	4	35	mg/kg	10.15.19 08:54	
o-Xylene	<0.00200	0.100	0.0854	85	0.0911	91	70-130	6	35	mg/kg	10.15.19 08:54	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	86		89		88		70-130	%	10.15.19 08:54
4-Bromofluorobenzene	87		98		99		70-130	%	10.15.19 08:54

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3104363 — Matrix: Soil — Date Prep: 10.14.19
Parent Sample Id: 639592-001 — MS Sample Id: 639592-001 S — MSD Sample Id: 639592-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0638	64	0.0634	64	70-130	1	35	mg/kg	10.15.19 10:55	X
Toluene	<0.00200	0.100	0.0642	64	0.0637	64	70-130	1	35	mg/kg	10.15.19 10:55	X
Ethylbenzene	<0.00200	0.100	0.0638	64	0.0613	61	70-130	4	35	mg/kg	10.15.19 10:55	X
m,p-Xylenes	<0.00400	0.200	0.127	64	0.122	61	70-130	4	35	mg/kg	10.15.19 10:55	X
o-Xylene	<0.00200	0.100	0.0651	65	0.0681	68	70-130	5	35	mg/kg	10.15.19 10:55	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		90		70-130	%	10.15.19 10:55
4-Bromofluorobenzene	97		101		70-130	%	10.15.19 10:55

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

QC Summary 639592

LT Environmental, Inc.

JRU SWD Slowriser 105

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3104439 Matrix: Soil Date Prep: 10.15.19
Parent Sample Id: 639797-001 MS Sample Id: 639797-001 S MSD Sample Id: 639797-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0807	80	0.0886	89	70-130	9	35	mg/kg	10.16.19 02:14	
Toluene	<0.00202	0.101	0.0866	86	0.0956	96	70-130	10	35	mg/kg	10.16.19 02:14	
Ethylbenzene	<0.00202	0.101	0.0855	85	0.0949	95	70-130	10	35	mg/kg	10.16.19 02:14	
m,p-Xylenes	<0.00403	0.202	0.171	85	0.186	93	70-130	8	35	mg/kg	10.16.19 02:14	
o-Xylene	<0.00202	0.101	0.0932	92	0.104	104	70-130	11	35	mg/kg	10.16.19 02:14	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		93		70-130	%	10.16.19 02:14
4-Bromofluorobenzene	106		106		70-130	%	10.16.19 02:14

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

Chain of Custody

XENCO LABORATORIES

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

Work Order No: 639592

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
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432.704.5178	Email:	ggreen@ltenv.com ; dmoir@ltenv.com

Work Order Comments

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

Project Name:	JRU SWD Riser 105
Project Number:	
P.O. Number:	2RP-5557
Sampler's Name:	Garrett Green

Turn Around

Routine ☒
Rush:
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:	10

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
BH01	S	10/8/19	1120	1'	1	X	X	X
BH01A	S	10/8/19	1135	4'	1			
BH02	S	10/8/19	1210	4'	1			
BH03 ~~BH04A~~	S	10/8/19	1230	1'	1			
BH03A	S	10/8/19	1245	4'	1			
BH04	S	10/9/19	1105	4'	1			
DH04A	S	10/9/19	1120	8'	1			
BH05	S	10/8/19	1245	4'	1			
BH05A	S	10/9/19	1255	6'	1			
BH05B	S	10/9/19	1300	8'	1			

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Scott Dee	Anna Byers	10/10/19 10:30	2 Anna Byers		10/10/19 10:41
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

Inter-Office Shipment

IOS Number **49853**

Date/Time: 10/10/19 12:12
Created by: Elizabeth Mcclellan
Please send report to: Jessica Kramer

Lab# From: **Carlsbad**
Delivery Priority:
Address: 1089 N Canal Street

Lab# To: **Midland**
Air Bill No.:
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
639592-001	S	BH01	10/08/19 11:20	SW8021B	BTEX by EPA 8021B	10/16/19	10/22/19	JKR	BR4FBZ BZ BZME EBZ X	
639592-001	S	BH01	10/08/19 11:20	SW8015MOD_NM	TPH by SW8015 Mod	10/16/19	10/22/19	JKR	GRO-DRO PHCC10C28 PH	
639592-001	S	BH01	10/08/19 11:20	E300_CL	Chloride by EPA 300	10/16/19	04/05/20	JKR	CL	
639592-002	S	BH01A	10/08/19 11:35	SW8021B	BTEX by EPA 8021B	10/16/19	10/22/19	JKR	BR4FBZ BZ BZME EBZ X	
639592-002	S	BH01A	10/08/19 11:35	E300_CL	Chloride by EPA 300	10/16/19	04/05/20	JKR	CL	
639592-002	S	BH01A	10/08/19 11:35	SW8015MOD_NM	TPH by SW8015 Mod	10/16/19	10/22/19	JKR	GRO-DRO PHCC10C28 PH	
639592-003	S	BH02	10/08/19 12:10	SW8021B	BTEX by EPA 8021B	10/16/19	10/22/19	JKR	BR4FBZ BZ BZME EBZ X	
639592-003	S	BH02	10/08/19 12:10	E300_CL	Chloride by EPA 300	10/16/19	04/05/20	JKR	CL	
639592-003	S	BH02	10/08/19 12:10	SW8015MOD_NM	TPH by SW8015 Mod	10/16/19	10/22/19	JKR	GRO-DRO PHCC10C28 PH	
639592-004	S	BH03	10/08/19 12:30	SW8021B	BTEX by EPA 8021B	10/16/19	10/22/19	JKR	BR4FBZ BZ BZME EBZ X	
639592-004	S	BH03	10/08/19 12:30	SW8015MOD_NM	TPH by SW8015 Mod	10/16/19	10/22/19	JKR	GRO-DRO PHCC10C28 PH	
639592-004	S	BH03	10/08/19 12:30	E300_CL	Chloride by EPA 300	10/16/19	04/05/20	JKR	CL	
639592-005	S	BH03A	10/08/19 12:45	SW8021B	BTEX by EPA 8021B	10/16/19	10/22/19	JKR	BR4FBZ BZ BZME EBZ X	
639592-005	S	BH03A	10/08/19 12:45	SW8015MOD_NM	TPH by SW8015 Mod	10/16/19	10/22/19	JKR	GRO-DRO PHCC10C28 PH	
639592-005	S	BH03A	10/08/19 12:45	E300_CL	Chloride by EPA 300	10/16/19	04/05/20	JKR	CL	
639592-006	S	BH04	10/09/19 11:05	SW8021B	BTEX by EPA 8021B	10/16/19	10/23/19	JKR	BR4FBZ BZ BZME EBZ X	
639592-006	S	BH04	10/09/19 11:05	E300_CL	Chloride by EPA 300	10/16/19	04/06/20	JKR	CL	
639592-006	S	BH04	10/09/19 11:05	SW8015MOD_NM	TPH by SW8015 Mod	10/16/19	10/23/19	JKR	GRO-DRO PHCC10C28 PH	
639592-007	S	BH04A	10/09/19 11:20	SW8021B	BTEX by EPA 8021B	10/16/19	10/23/19	JKR	BR4FBZ BZ BZME EBZ X	
639592-007	S	BH04A	10/09/19 11:20	E300_CL	Chloride by EPA 300	10/16/19	04/06/20	JKR	CL	
639592-007	S	BH04A	10/09/19 11:20	SW8015MOD_NM	TPH by SW8015 Mod	10/16/19	10/23/19	JKR	GRO-DRO PHCC10C28 PH	
639592-008	S	BH05	10/09/19 12:45	E300_CL	Chloride by EPA 300	10/16/19	04/06/20	JKR	CL	
639592-008	S	BH05	10/09/19 12:45	SW8021B	BTEX by EPA 8021B	10/16/19	10/23/19	JKR	BR4FBZ BZ BZME EBZ X	
639592-008	S	BH05	10/09/19 12:45	SW8015MOD_NM	TPH by SW8015 Mod	10/16/19	10/23/19	JKR	GRO-DRO PHCC10C28 PH	
639592-009	S	BH05A	10/09/19 12:55	SW8015MOD_NM	TPH by SW8015 Mod	10/16/19	10/23/19	JKR	GRO-DRO PHCC10C28 PH	

Inter-Office Shipment

IOS Number **49853**

Date/Time: 10/10/19 12:12

Lab# From: **Carlsbad**

Lab# To: **Midland**

Created by: Elizabeth Mcclellan

Delivery Priority:

Air Bill No.:

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
639592-009	S	BH05A	10/09/19 12:55	E300_CL	Chloride by EPA 300	10/16/19	04/06/20	JKR	CL	
639592-009	S	BH05A	10/09/19 12:55	SW8021B	BTEX by EPA 8021B	10/16/19	10/23/19	JKR	BR4FBZ BZ BZME EBZ X	
639592-010	S	BH05B	10/09/19 13:00	SW8021B	BTEX by EPA 8021B	10/16/19	10/23/19	JKR	BR4FBZ BZ BZME EBZ X	
639592-010	S	BH05B	10/09/19 13:00	E300_CL	Chloride by EPA 300	10/16/19	04/06/20	JKR	CL	
639592-010	S	BH05B	10/09/19 13:00	SW8015MOD_NM	TPH by SW8015 Mod	10/16/19	10/23/19	JKR	GRO-DRO PHCC10C28 PH	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 10/10/2019

Received By:

Date Received:

Cooler Temperature:

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 49853

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

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

Received By: **Date Received:**

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		
#2 *Shipping container in good condition?	___	
#3 *Samples received with appropriate temperature?	___	
#4 *Custody Seals intact on shipping container/ cooler?	___	
#5 *Custody Seals Signed and dated for Containers/coolers	___	
#6 *IOS present?	___	
#7 Any missing/extra samples?	___	
#8 IOS agrees with sample label(s)/matrix?	___	
#9 Sample matrix/ properties agree with IOS?	___	
#10 Samples in proper container/ bottle?	___	
#11 Samples properly preserved?	___	
#12 Sample container(s) intact?	___	
#13 Sufficient sample amount for indicated test(s)?	___	
#14 All samples received within hold time?	___	

*** 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: _____

Analytical Report 640096

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU SWD Riser 105

26-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)

26-NOV-19

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

Reference: XENCO Report No(s): **640096**
JRU SWD Riser 105
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) 640096. 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. 640096 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 640096

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW01	S	10-14-19 09:55	0 - 9 ft	640096-001
SW02	S	10-14-19 10:00	0 - 9 ft	640096-002
SW03	S	10-14-19 10:05	0 - 6 ft	640096-003
SW04	S	10-14-19 10:10	0 - 10 ft	640096-004
SW05	S	10-14-19 10:45	0 - 9 ft	640096-005
SW06	S	10-14-19 10:50	3 ft	640096-006
FS01	S	10-14-19 11:30	7 - 9 ft	640096-007
FS02	S	10-14-19 11:35	6 - 8 ft	640096-008
FS03	S	10-14-19 11:40	8 - 10 ft	640096-009

CASE NARRATIVE

Client Name: LT Environmental, Inc.
Project Name: JRU SWD Riser 105

Project ID:
Work Order Number(s): *640096*

Report Date: *26-NOV-19*
Date Received: *10/15/2019*

Sample receipt non conformances and comments:

Corrected sample 005 (SW05) depth to read 0-6' NEW VERSION GENERATED JK 11/26/19

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3104823 BTEX by EPA 8021B
Surrogate 1,4-Difluorobenzene, Surrogate 4-Bromofluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 640096-001.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 640096

LT Environmental, Inc., Arvada, CO

Project Name: JRU SWD Riser 105

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Oct-15-19 04:39 pm

Report Date: 26-NOV-19

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	640096-001		640096-002		640096-003		640096-004		640096-005		640096-006	
	Field Id:	SW01		SW02		SW03		SW04		SW05		SW06	
	Depth:	0-9 ft		0-9 ft		0-6 ft		0-10 ft		0-9 ft		3- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-14-19 09:55		Oct-14-19 10:00		Oct-14-19 10:05		Oct-14-19 10:10		Oct-14-19 10:45		Oct-14-19 10:50	
BTEX by EPA 8021B SUB: T104704400-19-19	***Extracted:***	Oct-17-19 17:15		Oct-17-19 17:15		Oct-17-19 17:15		Oct-17-19 17:15		Oct-17-19 17:15		Oct-17-19 17:15	
	Analyzed:	Oct-17-19 23:43		Oct-18-19 02:04		Oct-18-19 02:24		Oct-18-19 02:45		Oct-18-19 04:03		Oct-18-19 04:23	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201	<0.00198	0.00198
Toluene		<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201	<0.00198	0.00198
Ethylbenzene		<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201	<0.00198	0.00198
m,p-Xylenes		<0.00398	0.00398	<0.00402	0.00402	<0.00398	0.00398	<0.00398	0.00398	<0.00402	0.00402	<0.00397	0.00397
o-Xylene		<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201	<0.00198	0.00198
Total Xylenes		<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201	<0.00198	0.00198
Total BTEX		<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201	<0.00198	0.00198
Chloride by EPA 300 SUB: T104704400-19-19	***Extracted:***	Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00	
	Analyzed:	Oct-17-19 19:53		Oct-17-19 19:59		Oct-17-19 20:05		Oct-17-19 20:58		Oct-17-19 20:11		Oct-17-19 20:28	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		92.0	4.98	69.1	4.99	34.0	4.96	138	5.00	5840	50.4	13900	99.2
TPH by SW8015 Mod SUB: T104704400-19-19	***Extracted:***	Oct-17-19 12:00		Oct-17-19 12:00		Oct-17-19 12:00		Oct-17-19 12:00		Oct-17-19 12:00		Oct-17-19 12:00	
	Analyzed:	Oct-17-19 14:02		Oct-17-19 14:58		Oct-17-19 15:17		Oct-17-19 15:36		Oct-17-19 15:55		Oct-17-19 16:13	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0	<49.9	49.9
Diesel Range Organics (DRO)		<50.0	50.0	<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0	<49.9	49.9
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0	<49.9	49.9
Total GRO-DRO		<50.0	50.0	<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0	<49.9	49.9
Total TPH		<50.0	50.0	<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0	<49.9	49.9

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Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 640096

LT Environmental, Inc., Arvada, CO

Project Name: JRU SWD Riser 105

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Oct-15-19 04:39 pm

Report Date: 26-NOV-19

Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	640096-007		640096-008		640096-009					
	Field Id:	FS01		FS02		FS03					
	Depth:	7-9 ft		6-8 ft		8-10 ft					
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	Oct-14-19 11:30		Oct-14-19 11:35		Oct-14-19 11:40					
BTEX by EPA 8021B	***Extracted:***	Oct-17-19 17:15		Oct-17-19 17:15		Oct-17-19 17:15					
SUB: T104704400-19-19	***Analyzed:***	Oct-18-19 04:43		Oct-18-19 05:03		Oct-18-19 05:23					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200				
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200				
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200				
m,p-Xylenes		<0.00399	0.00399	<0.00400	0.00400	<0.00401	0.00401				
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200				
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200				
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200				
Chloride by EPA 300	***Extracted:***	Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00					
SUB: T104704400-19-19	***Analyzed:***	Oct-17-19 20:34		Oct-17-19 20:40		Oct-17-19 20:46					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		153	25.0	105	24.9	216	50.3				
TPH by SW8015 Mod	***Extracted:***	Oct-17-19 12:00		Oct-17-19 12:00		Oct-17-19 12:00					
SUB: T104704400-19-19	***Analyzed:***	Oct-17-19 16:32		Oct-17-19 16:51		Oct-17-19 17:10					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9				
Diesel Range Organics (DRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9				
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9				
Total GRO-DRO		<50.0	50.0	<50.0	50.0	<49.9	49.9				
Total TPH		<50.0	50.0	<50.0	50.0	<49.9	49.9				

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

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analytical Results 640096

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-001	Date Collected:	10.14.19 09.55	Sample Depth:	0 - 9 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**92.0**	4.98	mg/kg	10.17.19 19.53		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 12.00	Basis:	Wet Weight
Seq Number:	3104730			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.17.19 14.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.17.19 14.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.17.19 14.02	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.17.19 14.02	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.17.19 14.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.17.19 14.02	
o-Terphenyl	84-15-1	91	%	70-135	10.17.19 14.02	

Certificate of Analytical Results 640096

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-001	Date Collected:	10.14.19 09.55	Sample Depth:	0 - 9 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.17.19 17.15	Basis:	Wet Weight
Seq Number:	3104823			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.17.19 23.43	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.17.19 23.43	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.17.19 23.43	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.17.19 23.43	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.17.19 23.43	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.17.19 23.43	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.17.19 23.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	45	%	70-130	10.17.19 23.43	**
1,4-Difluorobenzene	540-36-3	65	%	70-130	10.17.19 23.43	**

Certificate of Analytical Results 640096

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-002	Date Collected:	10.14.19 10.00	Sample Depth:	0 - 9 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**69.1**	4.99	mg/kg	10.17.19 19.59		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 12.00	Basis:	Wet Weight
Seq Number:	3104730			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.17.19 14.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.17.19 14.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.17.19 14.58	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.17.19 14.58	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.17.19 14.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	10.17.19 14.58	
o-Terphenyl	84-15-1	95	%	70-135	10.17.19 14.58	

Certificate of Analytical Results 640096

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-002	Date Collected:	10.14.19 10.00	Sample Depth:	0 - 9 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.17.19 17.15	Basis:	Wet Weight
Seq Number:	3104823			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.18.19 02.04	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.18.19 02.04	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.18.19 02.04	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.18.19 02.04	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.18.19 02.04	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.18.19 02.04	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.18.19 02.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	85	%	70-130	10.18.19 02.04	
4-Bromofluorobenzene	460-00-4	115	%	70-130	10.18.19 02.04	

Certificate of Analytical Results 640096

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-003	Date Collected:	10.14.19 10.05	Sample Depth:	0 - 6 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**34.0**	4.96	mg/kg	10.17.19 20.05		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 12.00	Basis:	Wet Weight
Seq Number:	3104730			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.17.19 15.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.17.19 15.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.17.19 15.17	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.17.19 15.17	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.17.19 15.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.17.19 15.17	
o-Terphenyl	84-15-1	95	%	70-135	10.17.19 15.17	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-003	Date Collected:	10.14.19 10.05	Sample Depth:	0 - 6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.17.19 17.15	Basis:	Wet Weight
Seq Number:	3104823			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.18.19 02.24	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.18.19 02.24	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.18.19 02.24	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.18.19 02.24	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.18.19 02.24	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.18.19 02.24	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.18.19 02.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	109	%	70-130	10.18.19 02.24	
1,4-Difluorobenzene	540-36-3	87	%	70-130	10.18.19 02.24	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**SW04**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-004	Date Collected:	10.14.19 10.10	Sample Depth:	0 - 10 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**138**	5.00	mg/kg	10.17.19 20.58		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 12.00	Basis:	Wet Weight
Seq Number:	3104730			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.17.19 15.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.17.19 15.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.17.19 15.36	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.17.19 15.36	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.17.19 15.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.17.19 15.36	
o-Terphenyl	84-15-1	93	%	70-135	10.17.19 15.36	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**SW04**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-004	Date Collected:	10.14.19 10.10	Sample Depth:	0 - 10 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.17.19 17.15	Basis:	Wet Weight
Seq Number:	3104823			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.18.19 02.45	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.18.19 02.45	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.18.19 02.45	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.18.19 02.45	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.18.19 02.45	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.18.19 02.45	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.18.19 02.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	10.18.19 02.45	
1,4-Difluorobenzene	540-36-3	88	%	70-130	10.18.19 02.45	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**SW05**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-005	Date Collected:	10.14.19 10.45	Sample Depth:	0 - 9 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5840**	50.4	mg/kg	10.17.19 20.11		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 12.00	Basis:	Wet Weight
Seq Number:	3104730			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.17.19 15.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.17.19 15.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.17.19 15.55	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.17.19 15.55	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.17.19 15.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.17.19 15.55	
o-Terphenyl	84-15-1	96	%	70-135	10.17.19 15.55	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**SW05**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-005	Date Collected:	10.14.19 10.45	Sample Depth:	0 - 9 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.17.19 17.15	Basis:	Wet Weight
Seq Number:	3104823			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.18.19 04.03	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.18.19 04.03	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.18.19 04.03	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.18.19 04.03	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.18.19 04.03	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.18.19 04.03	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.18.19 04.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	85	%	70-130	10.18.19 04.03	
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.18.19 04.03	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**SW06**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-006	Date Collected:	10.14.19 10.50	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**13900**	99.2	mg/kg	10.17.19 20.28		20

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 12.00	Basis:	Wet Weight
Seq Number:	3104730			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.17.19 16.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.17.19 16.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.17.19 16.13	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.17.19 16.13	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.17.19 16.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	10.17.19 16.13	
o-Terphenyl	84-15-1	100	%	70-135	10.17.19 16.13	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**SW06**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-006	Date Collected:	10.14.19 10.50	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.17.19 17.15	Basis:	Wet Weight
Seq Number:	3104823			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.18.19 04.23	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.18.19 04.23	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.18.19 04.23	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.18.19 04.23	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.18.19 04.23	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.18.19 04.23	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.18.19 04.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	70-130	10.18.19 04.23	
1,4-Difluorobenzene	540-36-3	89	%	70-130	10.18.19 04.23	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-007	Date Collected:	10.14.19 11.30	Sample Depth:	7 - 9 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**153**	25.0	mg/kg	10.17.19 20.34		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 12.00	Basis:	Wet Weight
Seq Number:	3104730			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.17.19 16.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.17.19 16.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.17.19 16.32	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.17.19 16.32	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.17.19 16.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.17.19 16.32	
o-Terphenyl	84-15-1	94	%	70-135	10.17.19 16.32	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-007	Date Collected:	10.14.19 11.30	Sample Depth:	7 - 9 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.17.19 17.15	Basis:	Wet Weight
Seq Number:	3104823			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.18.19 04.43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.18.19 04.43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.18.19 04.43	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.18.19 04.43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.18.19 04.43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.18.19 04.43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.18.19 04.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	10.18.19 04.43	
1,4-Difluorobenzene	540-36-3	91	%	70-130	10.18.19 04.43	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-008	Date Collected:	10.14.19 11.35	Sample Depth:	6 - 8 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**105**	24.9	mg/kg	10.17.19 20.40		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 12.00	Basis:	Wet Weight
Seq Number:	3104730			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.17.19 16.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.17.19 16.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.17.19 16.51	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.17.19 16.51	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.17.19 16.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.17.19 16.51	
o-Terphenyl	84-15-1	96	%	70-135	10.17.19 16.51	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-008	Date Collected:	10.14.19 11.35	Sample Depth:	6 - 8 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.17.19 17.15	Basis:	Wet Weight
Seq Number:	3104823			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.18.19 05.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.18.19 05.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.18.19 05.03	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	10.18.19 05.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.18.19 05.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.18.19 05.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.18.19 05.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	101	%	70-130	10.18.19 05.03	
1,4-Difluorobenzene	540-36-3	90	%	70-130	10.18.19 05.03	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-009	Date Collected:	10.14.19 11.40	Sample Depth:	8 - 10 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**216**	50.3	mg/kg	10.17.19 20.46		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 12.00	Basis:	Wet Weight
Seq Number:	3104730			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.17.19 17.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.17.19 17.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.17.19 17.10	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.17.19 17.10	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.17.19 17.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	10.17.19 17.10	
o-Terphenyl	84-15-1	100	%	70-135	10.17.19 17.10	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640096-009	Date Collected:	10.14.19 11.40	Sample Depth:	8 - 10 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.17.19 17.15	Basis:	Wet Weight
Seq Number:	3104823			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.18.19 05.23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.18.19 05.23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.18.19 05.23	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.18.19 05.23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.18.19 05.23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.18.19 05.23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.18.19 05.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	113	%	70-130	10.18.19 05.23	
1,4-Difluorobenzene	540-36-3	87	%	70-130	10.18.19 05.23	

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 640096

LT Environmental, Inc.

JRU SWD Riser 105

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104671 — Matrix: Solid — Date Prep: 10.17.19
MB Sample Id: 7688365-1-BLK — LCS Sample Id: 7688365-1-BKS — LCSD Sample Id: 7688365-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	253	101	254	102	90-110	0	20	mg/kg	10.17.19 19:23	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104671 — Matrix: Soil — Date Prep: 10.17.19
Parent Sample Id: 640096-004 — MS Sample Id: 640096-004 S — MSD Sample Id: 640096-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	138	250	386	99	383	98	90-110	1	20	mg/kg	10.17.19 21:04	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104671 — Matrix: Soil — Date Prep: 10.17.19
Parent Sample Id: 640162-003 — MS Sample Id: 640162-003 S — MSD Sample Id: 640162-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	351	248	582	93	581	93	90-110	0	20	mg/kg	10.17.19 19:41	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3104730 — Matrix: Solid — Date Prep: 10.17.19
MB Sample Id: 7688340-1-BLK — LCS Sample Id: 7688340-1-BKS — LCSD Sample Id: 7688340-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1060	106	1190	119	70-135	12	20	mg/kg	10.17.19 13:06	
Diesel Range Organics (DRO)	<15.0	1000	945	95	1060	106	70-135	11	20	mg/kg	10.17.19 13:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	84		115		125		70-135	%	10.17.19 13:06
o-Terphenyl	85		101		107		70-135	%	10.17.19 13:06

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3104730 — Matrix: Solid — Date Prep: 10.17.19
MB Sample Id: 7688340-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.17.19 12:47	

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

QC Summary 640096

LT Environmental, Inc.

JRU SWD Riser 105

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3104730 — Matrix: Soil — Date Prep: 10.17.19
Parent Sample Id: 640096-001 — MS Sample Id: 640096-001 S — MSD Sample Id: 640096-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	1160	116	1190	119	70-135	3	20	mg/kg	10.17.19 14:21	
Diesel Range Organics (DRO)	<15.0	998	1110	111	1120	112	70-135	1	20	mg/kg	10.17.19 14:21	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		129		70-135	%	10.17.19 14:21
o-Terphenyl	105		107		70-135	%	10.17.19 14:21

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3104823 — Matrix: Solid — Date Prep: 10.17.19
MB Sample Id: 7688493-1-BLK — LCS Sample Id: 7688493-1-BKS — LCSD Sample Id: 7688493-1-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	0.0844	84	0.0915	92	70-130	8	35	mg/kg	10.17.19 21:43	
Toluene	<0.00200	0.100	0.0886	89	0.0977	98	70-130	10	35	mg/kg	10.17.19 21:43	
Ethylbenzene	<0.00200	0.100	0.0991	99	0.110	110	70-130	10	35	mg/kg	10.17.19 21:43	
m,p-Xylenes	<0.00400	0.200	0.198	99	0.221	111	70-130	11	35	mg/kg	10.17.19 21:43	
o-Xylene	<0.00200	0.100	0.105	105	0.118	118	70-130	12	35	mg/kg	10.17.19 21:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		90		91		70-130	%	10.17.19 21:43
4-Bromofluorobenzene	103		118		125		70-130	%	10.17.19 21:43

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3104823 — Matrix: Soil — Date Prep: 10.17.19
Parent Sample Id: 640096-001 — MS Sample Id: 640096-001 S — MSD Sample Id: 640096-001 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	0.0753	75	0.0726	73	70-130	4	35	mg/kg	10.17.19 22:24	
Toluene	<0.00200	0.0998	0.0768	77	0.0808	81	70-130	5	35	mg/kg	10.17.19 22:24	
Ethylbenzene	<0.00200	0.0998	0.0835	84	0.0933	93	70-130	11	35	mg/kg	10.17.19 22:24	
m,p-Xylenes	<0.00399	0.200	0.165	83	0.187	94	70-130	13	35	mg/kg	10.17.19 22:24	
o-Xylene	<0.00200	0.0998	0.0876	88	0.0999	100	70-130	13	35	mg/kg	10.17.19 22:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		89		70-130	%	10.17.19 22:24
4-Bromofluorobenzene	114		132	**	70-130	%	10.17.19 22:24

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

Chain of Custody

Work Order No: 640076

XENCO LABORATORIES

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

Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432.704.5178	Email:	ggreen@ltenv.com ; dmoir@ltenv.com

Work Order Comments

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

Project Name:	JRU SWD Riser 105	Turn Around	
Project Number:		Routine	☑
P.O. Number:	2RP-5557	Rush:	
Sampler's Name:	Garrett Green	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	2.0	Thermometer ID	T-NM-007
Received Intact:	(Yes) No	Correction Factor:	-0.2
Cooler Custody Seals:	Yes (No) N/A	Total Containers:	9
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)
SW01	S	10/14/19	0955	0'-9'	1	X	X	X
SW02		10/14/19	1000	0'-9'	1			
SW03		10/14/19	1005	0'-6'	1			
SW04		10/14/19	1010	0'-10'	1			
SW05		10/14/19	1045	0'-10'	1			
SW06			1050	3'	1			
FS01			1130	7'-9'	1			
FS02			1135	6'-8'	1			
FS03			1140	8'-10	1			

Work Order Notes

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

Sample Comments

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		10/15/19 10:39	2		
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Inter-Office Shipment

IOS Number **50225**

Date/Time: 10/16/19 09:59
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.: 776737745954

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
640096-001	S	SW01	10/14/19 09:55	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/28/19	JKR	GRO-DRO PHCC10C28 PI	
640096-001	S	SW01	10/14/19 09:55	SW8021B	BTEX by EPA 8021B	10/21/19	10/28/19	JKR	BR4FBZ BZ BZME EBZ X	
640096-001	S	SW01	10/14/19 09:55	E300_CL	Chloride by EPA 300	10/21/19	04/11/20	JKR	CL	
640096-002	S	SW02	10/14/19 10:00	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/28/19	JKR	GRO-DRO PHCC10C28 PI	
640096-002	S	SW02	10/14/19 10:00	SW8021B	BTEX by EPA 8021B	10/21/19	10/28/19	JKR	BR4FBZ BZ BZME EBZ X	
640096-002	S	SW02	10/14/19 10:00	E300_CL	Chloride by EPA 300	10/21/19	04/11/20	JKR	CL	
640096-003	S	SW03	10/14/19 10:05	SW8021B	BTEX by EPA 8021B	10/21/19	10/28/19	JKR	BR4FBZ BZ BZME EBZ X	
640096-003	S	SW03	10/14/19 10:05	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/28/19	JKR	GRO-DRO PHCC10C28 PI	
640096-003	S	SW03	10/14/19 10:05	E300_CL	Chloride by EPA 300	10/21/19	04/11/20	JKR	CL	
640096-004	S	SW04	10/14/19 10:10	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/28/19	JKR	GRO-DRO PHCC10C28 PI	
640096-004	S	SW04	10/14/19 10:10	E300_CL	Chloride by EPA 300	10/21/19	04/11/20	JKR	CL	
640096-004	S	SW04	10/14/19 10:10	SW8021B	BTEX by EPA 8021B	10/21/19	10/28/19	JKR	BR4FBZ BZ BZME EBZ X	
640096-005	S	SW05	10/14/19 10:45	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/28/19	JKR	GRO-DRO PHCC10C28 PI	
640096-005	S	SW05	10/14/19 10:45	E300_CL	Chloride by EPA 300	10/21/19	04/11/20	JKR	CL	
640096-005	S	SW05	10/14/19 10:45	SW8021B	BTEX by EPA 8021B	10/21/19	10/28/19	JKR	BR4FBZ BZ BZME EBZ X	
640096-006	S	SW06	10/14/19 10:50	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/28/19	JKR	GRO-DRO PHCC10C28 PI	
640096-006	S	SW06	10/14/19 10:50	E300_CL	Chloride by EPA 300	10/21/19	04/11/20	JKR	CL	
640096-006	S	SW06	10/14/19 10:50	SW8021B	BTEX by EPA 8021B	10/21/19	10/28/19	JKR	BR4FBZ BZ BZME EBZ X	
640096-007	S	FS01	10/14/19 11:30	E300_CL	Chloride by EPA 300	10/21/19	04/11/20	JKR	CL	
640096-007	S	FS01	10/14/19 11:30	SW8021B	BTEX by EPA 8021B	10/21/19	10/28/19	JKR	BR4FBZ BZ BZME EBZ X	
640096-007	S	FS01	10/14/19 11:30	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/28/19	JKR	GRO-DRO PHCC10C28 PI	
640096-008	S	FS02	10/14/19 11:35	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/28/19	JKR	GRO-DRO PHCC10C28 PI	
640096-008	S	FS02	10/14/19 11:35	E300_CL	Chloride by EPA 300	10/21/19	04/11/20	JKR	CL	
640096-008	S	FS02	10/14/19 11:35	SW8021B	BTEX by EPA 8021B	10/21/19	10/28/19	JKR	BR4FBZ BZ BZME EBZ X	
640096-009	S	FS03	10/14/19 11:40	E300_CL	Chloride by EPA 300	10/21/19	04/11/20	JKR	CL	

Inter-Office Shipment

IOS Number **50225**

Date/Time: 10/16/19 09:59
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.: 776737745954

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
640096-009	S	FS03	10/14/19 11:40	SW8021B	BTEX by EPA 8021B	10/21/19	10/28/19	JKR	BR4FBZ BZ BZME EBZ X	
640096-009	S	FS03	10/14/19 11:40	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/28/19	JKR	GRO-DRO PHCC10C28 PI	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 10/16/2019

Received By: Amanda Levario

Date Received: 10/17/2019 11:19

Cooler Temperature: 3.3

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 50225

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

Sent By: Elizabeth McClellan **Date Sent:** 10/16/2019 09:59 AM

Received By: Amanda Levario **Date Received:** 10/17/2019 11:19 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	3.3	
#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: 10/17/2019

Amanda Levario

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/15/2019 04:39:00 PM

Work Order #: 640096

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**No**	
#5 Custody Seals intact on sample bottles?	**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 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: 10/16/2019

Checklist reviewed by: Jessica Kramer Date: 10/17/2019

Analytical Report 640098

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU SWD Riser 105

21-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)

21-OCT-19

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

Reference: XENCO Report No(s): **640098**
JRU SWD Riser 105
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) 640098. 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. 640098 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
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Sample Cross Reference 640098

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH06	S	10-15-19 10:15	1 ft	640098-001
BH06A	S	10-15-19 10:30	4 ft	640098-002
BH07	S	10-15-19 11:00	1 ft	640098-003
BH07A	S	10-15-19 11:20	4 ft	640098-004
BH08	S	10-15-19 12:30	1 ft	640098-005
BH08A	S	10-15-19 12:45	4 ft	640098-006
BH09	S	10-15-19 13:00	1 ft	640098-007
BH09A	S	10-15-19 13:15	4 ft	640098-008
BH10	S	10-15-19 13:30	1 ft	640098-009
BH10A	S	10-15-19 13:45	4 ft	640098-010
BH11	S	10-15-19 14:05	1 ft	640098-011
BH11A	S	10-15-19 14:20	4 ft	640098-012

CASE NARRATIVE

Client Name: LT Environmental, Inc.
Project Name: JRU SWD Riser 105

Project ID:
Work Order Number(s): *640098*

Report Date: *21-OCT-19*
Date Received: *10/15/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3104736 TPH by SW8015 Mod
Lab Sample ID 640098-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Diesel Range Organics (DRO), Gasoline Range Hydrocarbons (GRO) recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 640098-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012.
The Laboratory Control Sample for Gasoline Range Hydrocarbons (GRO), Diesel Range Organics (DRO) is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3104823 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 640096-001 SD.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3104855 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 640098

LT Environmental, Inc., Arvada, CO

Project Name: JRU SWD Riser 105

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Oct-15-19 04:39 pm

Report Date: 21-OCT-19

Project Manager: Jessica Kramer

Analysis Requested		Lab Id:	640098-001		640098-002		640098-003		640098-004		640098-005		640098-006	
		Field Id:	BH06		BH06A		BH07		BH07A		BH08		BH08A	
		Depth:	1- ft		4- ft		1- ft		4- ft		1- ft		4- ft	
		Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
		Sampled:	Oct-15-19 10:15		Oct-15-19 10:30		Oct-15-19 11:00		Oct-15-19 11:20		Oct-15-19 12:30		Oct-15-19 12:45	
BTEX by EPA 8021B	Extracted:		Oct-17-19 17:15		Oct-17-19 17:15		Oct-17-19 17:15		Oct-17-19 17:15		Oct-18-19 16:30		Oct-18-19 16:30	
SUB: T104704400-19-19	Analyzed:		Oct-18-19 05:44		Oct-18-19 08:28		Oct-18-19 08:48		Oct-18-19 09:09		Oct-19-19 01:16		** ** ** **	
	Units/RL:		mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene			<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201
Toluene			<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201
Ethylbenzene			<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201
m,p-Xylenes			<0.00402	0.00402	<0.00398	0.00398	<0.00399	0.00399	<0.00401	0.00401	<0.00398	0.00398	<0.00402	0.00402
o-Xylene			<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201
Total Xylenes			<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201
Total BTEX			<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201
Chloride by EPA 300	Extracted:		Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00	
SUB: T104704400-19-19	Analyzed:		Oct-18-19 08:07		Oct-17-19 21:16		Oct-17-19 21:22		Oct-17-19 21:40		Oct-17-19 21:46		Oct-17-19 21:52	
	Units/RL:		mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride			12.5	5.01	160	4.96	9.19	4.99	32.7	4.98	10.9	5.04	19.4	4.97
TPH by SW8015 Mod	Extracted:		Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00	
SUB: T104704400-19-19	Analyzed:		Oct-17-19 23:22		Oct-18-19 00:25		Oct-18-19 00:46		Oct-18-19 01:07		Oct-18-19 01:28		Oct-18-19 01:49	
	Units/RL:		mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)			<49.9	49.9	<49.8	49.8	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0
Diesel Range Organics (DRO)			<49.9	49.9	<49.8	49.8	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0
Motor Oil Range Hydrocarbons (MRO)			<49.9	49.9	<49.8	49.8	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0
Total GRO-DRO			<49.9	49.9	<49.8	49.8	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0
Total TPH			<49.9	49.9	<49.8	49.8	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 640098

LT Environmental, Inc., Arvada, CO

Project Name: JRU SWD Riser 105

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Oct-15-19 04:39 pm

Report Date: 21-OCT-19

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	640098-007		640098-008		640098-009		640098-010		640098-011		640098-012	
	Field Id:	BH09		BH09A		BH10		BH10A		BH11		BH11A	
	Depth:	1- ft		4- ft		1- ft		4- ft		1- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-15-19 13:00		Oct-15-19 13:15		Oct-15-19 13:30		Oct-15-19 13:45		Oct-15-19 14:05		Oct-15-19 14:20	
BTEX by EPA 8021B SUB: T104704400-19-19	***Extracted:***	Oct-18-19 16:30		Oct-18-19 16:30		Oct-18-19 16:30		Oct-18-19 16:30		Oct-18-19 16:30		Oct-18-19 16:30	
	Analyzed:	** ** ** **		** ** ** **		** ** ** **		** ** ** **		** ** ** **		** ** ** **	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202
Toluene		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202
Ethylbenzene		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202
m,p-Xylenes		<0.00401	0.00401	<0.00398	0.00398	<0.00399	0.00399	<0.00398	0.00398	<0.00399	0.00399	<0.00403	0.00403
o-Xylene		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202
Total Xylenes		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202
Total BTEX		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202
Chloride by EPA 300 SUB: T104704400-19-19	***Extracted:***	Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:15		Oct-17-19 14:15	
	Analyzed:	Oct-17-19 21:58		Oct-17-19 22:04		Oct-17-19 22:10		Oct-17-19 22:16		Oct-17-19 19:46		Oct-17-19 20:01	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		43.7	4.99	76.3	5.00	<5.02	5.02	175	4.98	11.4	5.00	15.5	5.04
TPH by SW8015 Mod SUB: T104704400-19-19	***Extracted:***	Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00		Oct-17-19 14:00	
	Analyzed:	Oct-18-19 02:09		Oct-18-19 02:30		Oct-18-19 02:51		Oct-18-19 03:12		Oct-18-19 03:54		Oct-18-19 04:15	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9
Diesel Range Organics (DRO)		<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9
Total GRO-DRO		<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9
Total TPH		<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9

Jessica Kramer
Project Assistant

Certificate of Analytical Results 640098

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH06**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-001	Date Collected:	10.15.19 10.15	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**12.5**	5.01	mg/kg	10.18.19 08.07		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104736			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.17.19 23.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.17.19 23.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.17.19 23.22	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.17.19 23.22	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.17.19 23.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	10.17.19 23.22	
o-Terphenyl	84-15-1	118	%	70-135	10.17.19 23.22	

Certificate of Analytical Results 640098

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH06**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-001	Date Collected:	10.15.19 10.15	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.17.19 17.15	Basis:	Wet Weight
Seq Number:	3104823			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.18.19 05.44	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.18.19 05.44	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.18.19 05.44	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.18.19 05.44	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.18.19 05.44	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.18.19 05.44	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.18.19 05.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	116	%	70-130	10.18.19 05.44	
1,4-Difluorobenzene	540-36-3	88	%	70-130	10.18.19 05.44	

Certificate of Analytical Results 640098

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH06A**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-002	Date Collected:	10.15.19 10.30	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**160**	4.96	mg/kg	10.17.19 21.16		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104736			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.18.19 00.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.18.19 00.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.18.19 00.25	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.18.19 00.25	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.18.19 00.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	10.18.19 00.25	
o-Terphenyl	84-15-1	110	%	70-135	10.18.19 00.25	

Certificate of Analytical Results 640098

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH06A**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-002	Date Collected:	10.15.19 10.30	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.17.19 17.15	Basis:	Wet Weight
Seq Number:	3104823			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.18.19 08.28	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.18.19 08.28	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.18.19 08.28	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.18.19 08.28	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.18.19 08.28	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.18.19 08.28	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.18.19 08.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	85	%	70-130	10.18.19 08.28	
4-Bromofluorobenzene	460-00-4	120	%	70-130	10.18.19 08.28	

Certificate of Analytical Results 640098

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH07**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-003	Date Collected:	10.15.19 11.00	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**9.19**	4.99	mg/kg	10.17.19 21.22		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104736			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.18.19 00.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.18.19 00.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.18.19 00.46	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.18.19 00.46	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.18.19 00.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	10.18.19 00.46	
o-Terphenyl	84-15-1	109	%	70-135	10.18.19 00.46	

Certificate of Analytical Results 640098

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH07**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-003	Date Collected:	10.15.19 11.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.17.19 17.15	Basis:	Wet Weight
Seq Number:	3104823			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.18.19 08.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.18.19 08.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.18.19 08.48	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.18.19 08.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.18.19 08.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.18.19 08.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.18.19 08.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	70-130	10.18.19 08.48	
1,4-Difluorobenzene	540-36-3	85	%	70-130	10.18.19 08.48	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH07A**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-004	Date Collected:	10.15.19 11.20	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**32.7**	4.98	mg/kg	10.17.19 21.40		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104736			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.18.19 01.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.18.19 01.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.18.19 01.07	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.18.19 01.07	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.18.19 01.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	10.18.19 01.07	
o-Terphenyl	84-15-1	110	%	70-135	10.18.19 01.07	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH07A**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-004	Date Collected:	10.15.19 11.20	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.17.19 17.15	Basis:	Wet Weight
Seq Number:	3104823			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.18.19 09.09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.18.19 09.09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.18.19 09.09	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.18.19 09.09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.18.19 09.09	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.18.19 09.09	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.18.19 09.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	113	%	70-130	10.18.19 09.09	
1,4-Difluorobenzene	540-36-3	88	%	70-130	10.18.19 09.09	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH08**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-005	Date Collected:	10.15.19 12.30	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**10.9**	5.04	mg/kg	10.17.19 21.46		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104736			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.18.19 01.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.18.19 01.28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.18.19 01.28	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.18.19 01.28	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.18.19 01.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	10.18.19 01.28	
o-Terphenyl	84-15-1	105	%	70-135	10.18.19 01.28	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH08**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-005	Date Collected:	10.15.19 12.30	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.18.19 16.30	Basis:	Wet Weight
Seq Number:	3104855			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.19.19 01.16	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.19.19 01.16	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.19.19 01.16	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.19.19 01.16	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.19.19 01.16	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.19.19 01.16	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.19.19 01.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	93	%	70-130	10.19.19 01.16	
4-Bromofluorobenzene	460-00-4	99	%	70-130	10.19.19 01.16	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH08A**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-006	Date Collected:	10.15.19 12.45	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**19.4**	4.97	mg/kg	10.17.19 21.52		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104736			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.18.19 01.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.18.19 01.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.18.19 01.49	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.18.19 01.49	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.18.19 01.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	10.18.19 01.49	
o-Terphenyl	84-15-1	110	%	70-135	10.18.19 01.49	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH08A**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-006	Date Collected:	10.15.19 12.45	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.18.19 16.30	Basis:	Wet Weight
Seq Number:	3104855			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.18.19 08.16	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.18.19 08.16	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.18.19 08.16	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.18.19 08.16	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.18.19 08.16	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.18.19 08.16	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.18.19 08.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94	%	70-130	10.18.19 08.16	
1,4-Difluorobenzene	540-36-3	95	%	70-130	10.18.19 08.16	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH09**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-007	Date Collected:	10.15.19 13.00	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**43.7**	4.99	mg/kg	10.17.19 21.58		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104736			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.18.19 02.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.18.19 02.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.18.19 02.09	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.18.19 02.09	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.18.19 02.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	10.18.19 02.09	
o-Terphenyl	84-15-1	106	%	70-135	10.18.19 02.09	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH09**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-007	Date Collected:	10.15.19 13.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.18.19 16.30	Basis:	Wet Weight
Seq Number:	3104855			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.18.19 08.36	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.18.19 08.36	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.18.19 08.36	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.18.19 08.36	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.18.19 08.36	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.18.19 08.36	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.18.19 08.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	70-130	10.18.19 08.36	
1,4-Difluorobenzene	540-36-3	91	%	70-130	10.18.19 08.36	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH09A**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-008	Date Collected:	10.15.19 13.15	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**76.3**	5.00	mg/kg	10.17.19 22.04		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104736			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.18.19 02.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.18.19 02.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.18.19 02.30	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.18.19 02.30	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.18.19 02.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	10.18.19 02.30	
o-Terphenyl	84-15-1	102	%	70-135	10.18.19 02.30	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH09A**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-008	Date Collected:	10.15.19 13.15	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.18.19 16.30	Basis:	Wet Weight
Seq Number:	3104855			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.18.19 08.56	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.18.19 08.56	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.18.19 08.56	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.18.19 08.56	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.18.19 08.56	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.18.19 08.56	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.18.19 08.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	10.18.19 08.56	
1,4-Difluorobenzene	540-36-3	89	%	70-130	10.18.19 08.56	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH10**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-009	Date Collected:	10.15.19 13.30	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.02	5.02	mg/kg	10.17.19 22.10	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104736			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.18.19 02.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.18.19 02.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.18.19 02.51	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.18.19 02.51	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.18.19 02.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	10.18.19 02.51	
o-Terphenyl	84-15-1	100	%	70-135	10.18.19 02.51	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH10**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-009	Date Collected:	10.15.19 13.30	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.18.19 16.30	Basis:	Wet Weight
Seq Number:	3104855			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.18.19 09.16	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.18.19 09.16	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.18.19 09.16	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.18.19 09.16	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.18.19 09.16	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.18.19 09.16	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.18.19 09.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	80	%	70-130	10.18.19 09.16	
1,4-Difluorobenzene	540-36-3	83	%	70-130	10.18.19 09.16	

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LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH10A**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-010	Date Collected:	10.15.19 13.45	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104671			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**175**	4.98	mg/kg	10.17.19 22.16		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104736			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.18.19 03.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.18.19 03.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.18.19 03.12	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.18.19 03.12	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.18.19 03.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	10.18.19 03.12	
o-Terphenyl	84-15-1	109	%	70-135	10.18.19 03.12	

Certificate of Analytical Results 640098

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH10A**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-010	Date Collected:	10.15.19 13.45	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.18.19 16.30	Basis:	Wet Weight
Seq Number:	3104855			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.18.19 10.16	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.18.19 10.16	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.18.19 10.16	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.18.19 10.16	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.18.19 10.16	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.18.19 10.16	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.18.19 10.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	93	%	70-130	10.18.19 10.16	
4-Bromofluorobenzene	460-00-4	89	%	70-130	10.18.19 10.16	

Certificate of Analytical Results 640098

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH11**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-011	Date Collected:	10.15.19 14.05	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.15	Basis:	Wet Weight
Seq Number:	3104674			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11.4**	5.00	mg/kg	10.17.19 19.46		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104736			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.18.19 03.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.18.19 03.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.18.19 03.54	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.18.19 03.54	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.18.19 03.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	10.18.19 03.54	
o-Terphenyl	84-15-1	103	%	70-135	10.18.19 03.54	

Certificate of Analytical Results 640098

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH11**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-011	Date Collected:	10.15.19 14.05	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.18.19 16.30	Basis:	Wet Weight
Seq Number:	3104855			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.18.19 10.55	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.18.19 10.55	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.18.19 10.55	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.18.19 10.55	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.18.19 10.55	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.18.19 10.55	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.18.19 10.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	86	%	70-130	10.18.19 10.55	
1,4-Difluorobenzene	540-36-3	88	%	70-130	10.18.19 10.55	

Certificate of Analytical Results 640098

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH11A**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-012	Date Collected:	10.15.19 14.20	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	10.17.19 14.15	Basis:	Wet Weight
Seq Number:	3104674			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**15.5**	5.04	mg/kg	10.17.19 20.01		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	10.17.19 14.00	Basis:	Wet Weight
Seq Number:	3104736			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.18.19 04.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.18.19 04.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.18.19 04.15	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.18.19 04.15	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.18.19 04.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	10.18.19 04.15	
o-Terphenyl	84-15-1	109	%	70-135	10.18.19 04.15	

Certificate of Analytical Results 640098

LT Environmental, Inc., Arvada, CO

JRU SWD Riser 105

Sample Id:	**BH11A**	Matrix:	Soil	Date Received:	10.15.19 16.39
Lab Sample Id:	640098-012	Date Collected:	10.15.19 14.20	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.18.19 16.30	Basis:	Wet Weight
Seq Number:	3104855			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.18.19 11.15	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.18.19 11.15	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.18.19 11.15	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.18.19 11.15	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.18.19 11.15	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.18.19 11.15	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.18.19 11.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	89	%	70-130	10.18.19 11.15	
4-Bromofluorobenzene	460-00-4	91	%	70-130	10.18.19 11.15	

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 640098

LT Environmental, Inc.

JRU SWD Riser 105

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104671 — Matrix: Solid — Date Prep: 10.17.19
MB Sample Id: 7688365-1-BLK — LCS Sample Id: 7688365-1-BKS — LCSD Sample Id: 7688365-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	253	101	254	102	90-110	0	20	mg/kg	10.17.19 19:23	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104674 — Matrix: Solid — Date Prep: 10.17.19
MB Sample Id: 7688366-1-BLK — LCS Sample Id: 7688366-1-BKS — LCSD Sample Id: 7688366-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	266	106	265	106	90-110	0	20	mg/kg	10.17.19 19:36	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104671 — Matrix: Soil — Date Prep: 10.17.19
Parent Sample Id: 640096-004 — MS Sample Id: 640096-004 S — MSD Sample Id: 640096-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	138	250	386	99	383	98	90-110	1	20	mg/kg	10.17.19 21:04	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104671 — Matrix: Soil — Date Prep: 10.17.19
Parent Sample Id: 640162-003 — MS Sample Id: 640162-003 S — MSD Sample Id: 640162-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	351	248	582	93	581	93	90-110	0	20	mg/kg	10.17.19 19:41	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104674 — Matrix: Soil — Date Prep: 10.17.19
Parent Sample Id: 640098-011 — MS Sample Id: 640098-011 S — MSD Sample Id: 640098-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	11.4	250	258	99	261	100	90-110	1	20	mg/kg	10.17.19 19:51	

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 640098

LT Environmental, Inc.

JRU SWD Riser 105

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104674 — Matrix: Soil — Date Prep: 10.17.19
Parent Sample Id: 640269-006 — MS Sample Id: 640269-006 S — MSD Sample Id: 640269-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	298	250	533	94	535	95	90-110	0	20	mg/kg	10.17.19 21:01	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3104736 — Matrix: Solid — Date Prep: 10.17.19
MB Sample Id: 7688387-1-BLK — LCS Sample Id: 7688387-1-BKS — LCSD Sample Id: 7688387-1-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	1180	118	1170	117	70-135	1	20	mg/kg	10.17.19 22:41	
Diesel Range Organics (DRO)	<15.0	1000	1130	113	1090	109	70-135	4	20	mg/kg	10.17.19 22:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		114		111		70-135	%	10.17.19 22:41
o-Terphenyl	99		105		105		70-135	%	10.17.19 22:41

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3104736 — Matrix: Solid — Date Prep: 10.17.19
MB Sample Id: 7688387-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.17.19 22:20	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3104736 — Matrix: Soil — Date Prep: 10.17.19
Parent Sample Id: 640098-001 — MS Sample Id: 640098-001 S — MSD Sample Id: 640098-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	1460	146	1430	143	70-135	2	20	mg/kg	10.17.19 23:44	X
Diesel Range Organics (DRO)	<15.0	999	1400	140	1410	141	70-135	1	20	mg/kg	10.17.19 23:44	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		125		70-135	%	10.17.19 23:44
o-Terphenyl	122		122		70-135	%	10.17.19 23:44

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

QC Summary 640098

LT Environmental, Inc.

JRU SWD Riser 105

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3104823 — Matrix: Solid — Date Prep: 10.17.19
MB Sample Id: 7688493-1-BLK — LCS Sample Id: 7688493-1-BKS — LCSD Sample Id: 7688493-1-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	0.0844	84	0.0915	92	70-130	8	35	mg/kg	10.17.19 21:43	
Toluene	<0.00200	0.100	0.0886	89	0.0977	98	70-130	10	35	mg/kg	10.17.19 21:43	
Ethylbenzene	<0.00200	0.100	0.0991	99	0.110	110	70-130	10	35	mg/kg	10.17.19 21:43	
m,p-Xylenes	<0.00400	0.200	0.198	99	0.221	111	70-130	11	35	mg/kg	10.17.19 21:43	
o-Xylene	<0.00200	0.100	0.105	105	0.118	118	70-130	12	35	mg/kg	10.17.19 21:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		90		91		70-130	%	10.17.19 21:43
4-Bromofluorobenzene	103		118		125		70-130	%	10.17.19 21:43

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3104855 — Matrix: Solid — Date Prep: 10.18.19
MB Sample Id: 7688520-1-BLK — LCS Sample Id: 7688520-1-BKS — LCSD Sample Id: 7688520-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000730	0.100	0.0978	98	0.103	103	70-130	5	35	mg/kg	10.18.19 04:15	
Toluene	<0.00200	0.100	0.109	109	0.105	105	70-130	4	35	mg/kg	10.18.19 04:15	
Ethylbenzene	<0.00200	0.100	0.0997	100	0.104	104	70-130	4	35	mg/kg	10.18.19 04:15	
m,p-Xylenes	<0.00400	0.200	0.197	99	0.204	102	70-130	3	35	mg/kg	10.18.19 04:15	
o-Xylene	<0.00200	0.100	0.101	101	0.106	106	70-130	5	35	mg/kg	10.18.19 04:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		88		93		70-130	%	10.18.19 04:15
4-Bromofluorobenzene	70		98		102		70-130	%	10.18.19 04:15

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3104823 — Matrix: Soil — Date Prep: 10.17.19
Parent Sample Id: 640096-001 — MS Sample Id: 640096-001 S — MSD Sample Id: 640096-001 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	0.0753	75	0.0726	73	70-130	4	35	mg/kg	10.17.19 22:24	
Toluene	<0.00200	0.0998	0.0768	77	0.0808	81	70-130	5	35	mg/kg	10.17.19 22:24	
Ethylbenzene	<0.00200	0.0998	0.0835	84	0.0933	93	70-130	11	35	mg/kg	10.17.19 22:24	
m,p-Xylenes	<0.00399	0.200	0.165	83	0.187	94	70-130	13	35	mg/kg	10.17.19 22:24	
o-Xylene	<0.00200	0.0998	0.0876	88	0.0999	100	70-130	13	35	mg/kg	10.17.19 22:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		89		70-130	%	10.17.19 22:24
4-Bromofluorobenzene	114		132	**	70-130	%	10.17.19 22:24

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

QC Summary 640098

LT Environmental, Inc.

JRU SWD Riser 105

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3104855 Matrix: Soil Date Prep: 10.18.19
Parent Sample Id: 640269-001 MS Sample Id: 640269-001 S MSD Sample Id: 640269-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0716	72	0.0727	73	70-130	2	35	mg/kg	10.18.19 04:55	
Toluene	<0.00199	0.0996	0.0797	80	0.0782	78	70-130	2	35	mg/kg	10.18.19 04:55	
Ethylbenzene	<0.00199	0.0996	0.0846	85	0.0813	81	70-130	4	35	mg/kg	10.18.19 04:55	
m,p-Xylenes	<0.00398	0.199	0.157	79	0.161	81	70-130	3	35	mg/kg	10.18.19 04:55	
o-Xylene	<0.00199	0.0996	0.0819	82	0.0871	87	70-130	6	35	mg/kg	10.18.19 04:55	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		92		70-130	%	10.18.19 04:55
4-Bromofluorobenzene	107		96		70-130	%	10.18.19 04:55

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

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: 640093

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Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432.704.5178	Email:	ggreen@ltenv.com ; dmoir@ltenv.com

Work Order Comments

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

Project Name:	JRU SWD Riser 105	Turn Around	
Project Number:		Routine	☑
P.O. Number:	2RP-5557	Rush:	
Sampler's Name:	Garrett Green	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	2.0	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:	12

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
BH06	S	10/15/19	1015	1'	1	X	X	X
BH06A			1030	4'	1			
BH07			1100	1'	1			
BH07A			1120	4'	1			
BH08			1230	1'	1			
BH08A			1245	4'	1			
BH09			1300	1'	1			
BH09A			1315	4'	1			
BH10			1330	1'	1			
BH10A	↓	↓	1345	4'	1	↓	↓	↓

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

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

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			10/15/19 16:39	2		
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

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)
www.xenco.com

Work Order No: 640093

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432.704.5178	Email:	ggreen@ltenv.com ; dmoir@ltenv.com

Work Order Comments

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

Project Name:	JRU SWD Riser 105	Turn Around	
Project Number:		Routine	☑
P.O. Number:	2RP-5557	Rush:	
Sampler's Name:	Garrett Green	Due Date:	

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
BH11	S	10/15/19	1405	1'	1	X	X	X
BH11A	S	10/15/19	1420	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
1			10/15/19 16:39	2		
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

Inter-Office Shipment

IOS Number **50228**

Date/Time: 10/16/19 10:16
Created by: Elizabeth Mcclellan
Please send report to: Jessica Kramer

Lab# From: **Carlsbad**
Delivery Priority:
Address: 1089 N Canal Street

Lab# To: **Midland**
Air Bill No.: 776737745954
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
640098-001	S	BH06	10/15/19 10:15	E300_CL	Chloride by EPA 300	10/21/19	04/12/20	JKR	CL	
640098-001	S	BH06	10/15/19 10:15	SW8021B	BTEX by EPA 8021B	10/21/19	10/29/19	JKR	BR4FBZ BZ BZME EBZ X	
640098-001	S	BH06	10/15/19 10:15	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/29/19	JKR	GRO-DRO PHCC10C28 PH	
640098-002	S	BH06A	10/15/19 10:30	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/29/19	JKR	GRO-DRO PHCC10C28 PH	
640098-002	S	BH06A	10/15/19 10:30	SW8021B	BTEX by EPA 8021B	10/21/19	10/29/19	JKR	BR4FBZ BZ BZME EBZ X	
640098-002	S	BH06A	10/15/19 10:30	E300_CL	Chloride by EPA 300	10/21/19	04/12/20	JKR	CL	
640098-003	S	BH07	10/15/19 11:00	SW8021B	BTEX by EPA 8021B	10/21/19	10/29/19	JKR	BR4FBZ BZ BZME EBZ X	
640098-003	S	BH07	10/15/19 11:00	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/29/19	JKR	GRO-DRO PHCC10C28 PH	
640098-003	S	BH07	10/15/19 11:00	E300_CL	Chloride by EPA 300	10/21/19	04/12/20	JKR	CL	
640098-004	S	BH07A	10/15/19 11:20	SW8021B	BTEX by EPA 8021B	10/21/19	10/29/19	JKR	BR4FBZ BZ BZME EBZ X	
640098-004	S	BH07A	10/15/19 11:20	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/29/19	JKR	GRO-DRO PHCC10C28 PH	
640098-004	S	BH07A	10/15/19 11:20	E300_CL	Chloride by EPA 300	10/21/19	04/12/20	JKR	CL	
640098-005	S	BH08	10/15/19 12:30	SW8021B	BTEX by EPA 8021B	10/21/19	10/29/19	JKR	BR4FBZ BZ BZME EBZ X	
640098-005	S	BH08	10/15/19 12:30	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/29/19	JKR	GRO-DRO PHCC10C28 PH	
640098-005	S	BH08	10/15/19 12:30	E300_CL	Chloride by EPA 300	10/21/19	04/12/20	JKR	CL	
640098-006	S	BH08A	10/15/19 12:45	SW8021B	BTEX by EPA 8021B	10/21/19	10/29/19	JKR	BR4FBZ BZ BZME EBZ X	
640098-006	S	BH08A	10/15/19 12:45	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/29/19	JKR	GRO-DRO PHCC10C28 PH	
640098-006	S	BH08A	10/15/19 12:45	E300_CL	Chloride by EPA 300	10/21/19	04/12/20	JKR	CL	
640098-007	S	BH09	10/15/19 13:00	E300_CL	Chloride by EPA 300	10/21/19	04/12/20	JKR	CL	
640098-007	S	BH09	10/15/19 13:00	SW8021B	BTEX by EPA 8021B	10/21/19	10/29/19	JKR	BR4FBZ BZ BZME EBZ X	
640098-007	S	BH09	10/15/19 13:00	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/29/19	JKR	GRO-DRO PHCC10C28 PH	
640098-008	S	BH09A	10/15/19 13:15	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/29/19	JKR	GRO-DRO PHCC10C28 PH	
640098-008	S	BH09A	10/15/19 13:15	SW8021B	BTEX by EPA 8021B	10/21/19	10/29/19	JKR	BR4FBZ BZ BZME EBZ X	
640098-008	S	BH09A	10/15/19 13:15	E300_CL	Chloride by EPA 300	10/21/19	04/12/20	JKR	CL	
640098-009	S	BH10	10/15/19 13:30	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/29/19	JKR	GRO-DRO PHCC10C28 PH	

Inter-Office Shipment

IOS Number **50228**

Date/Time: 10/16/19 10:16
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.: 776737745954

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
640098-009	S	BH10	10/15/19 13:30	SW8021B	BTEX by EPA 8021B	10/21/19	10/29/19	JKR	BR4FBZ BZ BZME EBZ X	
640098-009	S	BH10	10/15/19 13:30	E300_CL	Chloride by EPA 300	10/21/19	04/12/20	JKR	CL	
640098-010	S	BH10A	10/15/19 13:45	SW8021B	BTEX by EPA 8021B	10/21/19	10/29/19	JKR	BR4FBZ BZ BZME EBZ X	
640098-010	S	BH10A	10/15/19 13:45	E300_CL	Chloride by EPA 300	10/21/19	04/12/20	JKR	CL	
640098-010	S	BH10A	10/15/19 13:45	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/29/19	JKR	GRO-DRO PHCC10C28 PH	
640098-011	S	BH11	10/15/19 14:05	SW8021B	BTEX by EPA 8021B	10/21/19	10/29/19	JKR	BR4FBZ BZ BZME EBZ X	
640098-011	S	BH11	10/15/19 14:05	E300_CL	Chloride by EPA 300	10/21/19	04/12/20	JKR	CL	
640098-011	S	BH11	10/15/19 14:05	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/29/19	JKR	GRO-DRO PHCC10C28 PH	
640098-012	S	BH11A	10/15/19 14:20	SW8015MOD_NM	TPH by SW8015 Mod	10/21/19	10/29/19	JKR	GRO-DRO PHCC10C28 PH	
640098-012	S	BH11A	10/15/19 14:20	E300_CL	Chloride by EPA 300	10/21/19	04/12/20	JKR	CL	
640098-012	S	BH11A	10/15/19 14:20	SW8021B	BTEX by EPA 8021B	10/21/19	10/29/19	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 10/16/2019

Received By: Amanda Levario

Date Received: 10/17/2019 11:19

Cooler Temperature: 3.3

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 50228

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

Sent By: Elizabeth McClellan **Date Sent:** 10/16/2019 10:16 AM

Received By: Amanda Levario **Date Received:** 10/17/2019 11:19 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	3.3	
#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: 10/17/2019
Amanda Levario

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/15/2019 04:39:00 PM

Work Order #: 640098

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**No**	
#5 Custody Seals intact on sample bottles?	**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 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: 10/17/2019

Checklist reviewed by: Jessica Kramer Date: 10/17/2019

Jessica Kramer