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	NAB1913358171
District RP	2RP-5412
Facility ID	
Application ID	pAB1913357328

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)* NAB1913358171
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.381675° Longitude -103.886826°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name James Ranch Unit DI1A #203H	Site Type Production Well Facility
Date Release Discovered 4/21/2019	API# *(if applicable)* 30-015-43237

Unit Letter	Section	Township	Range	County
F	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) 5	Volume Recovered (bbls) 4.88
	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

Contract crew reported release of fluid from the water transfer hose. The hose pressured up, broke the restraint bar, and fell out of the tank. Fluids were released to temporary lined containment and to the well pad. A vacuum truck recovered free fluid. The hose was replaced. Additional third party resources have been retained to assist with remediation.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NAB1913358171
District RP	2RP-5412
Facility ID	
Application ID	pAB1913357328

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:
N/A

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

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

Printed Name: Kyle Littrell
Title: SH&E Supervisor
Signature:
Date: 4/29/2019
email: Kyle_Littrell@xtoenergy.com
Telephone: 432-221-7331

OCD Only

Received by: Amalia Bustamante
Date: 5/13/2019

Incident ID	
District RP	2RP-5412
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	nAB1913358171
District RP	2RP-5412
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: 12/30/2019

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

OCD Only

Received by: Cristina Eads Date: 03/02/2020

State of New Mexico
Oil Conservation Division

Incident ID	nAB1913358171
District RP	2RP-5412
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 12/30/2019

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

OCD Only

Received by: Cristina Eads Date: 03/02/2020

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

Closure Approved by: Date: 03/02/2020

Printed Name: Cristina Eads Title: Environmental Specialist

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

January 10, 2020

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

RE: Closure Request
James Ranch Unit DI1A #203H
Remediation Permit Number 2RP-5412
Incident Number NAB1913358171
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request detailing site assessment and soil sampling activities at the James Ranch Unit DI1A #203H (Site) in Unit F, Section 21, Township 22 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment and soil sampling activities was to confirm the presence or absence of impacts to soil following the release of produced water at the Site. Based on field observations, field screening, and laboratory analytical results from soil sampling activities, XTO is submitting this Closure Request and requesting no further action (NFA) for Remediation Permit (RP) Number 2RP-5412.

RELEASE BACKGROUND

On April 21, 2019, a contract crew reported a release of fluid from the transfer water hose that pressured up, broke the restraint bar, and fell out of the tank. The incident resulted in the release of approximately five barrels (bbls) of produced water into temporary lined containment and onto the caliche well pad. A vacuum truck was dispatched to the Site to recover freestanding fluid and the hose was replaced. Approximately 4.88 bbls of produced water 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 April 29, 2019, and was subsequently issued RP Number 2RP-5412.

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 between 51 feet and 100 feet below ground surface (bgs) based on the nearest groundwater well data. The nearest permitted

groundwater well to the Site is the New Mexico Office of the State Engineer (NMOSE) well number C01916 located approximately 1,660 feet from the Site, however no depth to groundwater data is available for this well. The nearest permitted groundwater well with depth to groundwater data is the United States Geological Survey (USGS) well number 322252103541401, located approximately 5,273 feet west of the Site. The water well has a depth to groundwater of approximately 72 feet bgs and a total depth of 129 feet bgs. The closest continuously flowing water or significant watercourse to the Site is an intermittent stream located approximately 490 feet northeast of the release extent. 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. Site receptors are identified on Figure 1.

CLOSURE CRITERIA

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

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

SITE ASSESSMENT AND SOIL SAMPLING ACTIVITIES

On May 9, 2019, LTE personnel evaluated the release extent based on information provided on the Form C-141, an interview with an onsite XTO representative, and visual observations. LTE personnel collected three preliminary soil samples (SS01 through SS03) within close proximity to and surrounding the point of release from a depth of approximately 0.5 feet bgs to assess for the presence or absence of soil impacts at the ground surface. Soil was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.

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

TPH-diesel range organics (DRO), TPH-oil range organics (ORO) following EPA Method 8015M/D, and chloride following EPA Method 300.0.

Based on laboratory analytical results for the preliminary soil samples (SS01 through SS03), excavation activities did not appear warranted; however, additional assessment activities were scheduled to further confirm the absence of impacted soil exceeding the Closure Criteria. Further delineation and remediation efforts were postponed, however, as ongoing frac operations near the release which resulted in activity restrictions imposed due to safety concerns at the Site. Per 19.15.29.12.B.(1) NMAC, two extensions for submission of a Remediation Plan or Closure Request were granted. The initial extension was requested and approved July 18, 2019, and the second was approved on October 18, 2019, by the NMOCD District II office extending the deadline to January 20, 2020.

On November 7, 2019, LTE personnel returned to the Site after flowback operations were completed and the pad was accessible to oversee additional soil assessment activities. Three boreholes (BH01 through BH03) were advanced via hand auger, in the immediate vicinity of SS01 through SS03 preliminary soil sample locations, respectively.

Soil from the boreholes were field screened for volatile aromatic hydrocarbons and chloride. Field screening results and observations for each borehole were documented on lithologic/soil sampling logs and are included as Attachment 1. The delineation soil samples were collected, handled, and analyzed as described above at Xenco in Carlsbad, New Mexico. All boreholes were backfilled with the soil removed. The preliminary and delineation soil sample locations are depicted on Figure 2. Photographic documentation was conducted during the Site visit. Photographs are included in Attachment 2.

ANALYTICAL RESULTS

Laboratory analytical results indicated benzene, BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria in soil samples SS01 through SS03 collected at approximately 0.5 ft bgs and in delineation borehole samples BH01 through BH03 collected at approximately two feet bgs. Laboratory analytical results are presented on Figure 2 and summarized in Table 1. The complete laboratory analytical reports are included as Attachment 3.

CONCLUSIONS

Initial and follow-up response efforts as a result of the produced water release included removal of freestanding fluid via a hydrovac truck and collection of soil samples. Preliminary soil samples SS01 through SS03 and delineation borehole samples BH01 through BH03 were collected from within close proximity to and surrounding the point of release from depths ranging from 0.5 feet to two feet bgs to assess for the presence or absence of soil impacts as a result of the produced water release on April 21, 2019. Laboratory analytical results for all soil samples indicated

benzene, BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria. Additionally, field screening of soil indicated volatile aromatic hydrocarbons and chloride concentrations were not elevated and soil staining and petroleum hydrocarbon odors were not identified within the release extent.

Based on surficial and subsurface soil analytical results (SS01 through SS03 and BH01 through BH03, respectively), soil within close proximity to and surrounding the point of release did not appear to be impacted. As a result, soil excavation did not appear warranted and soil assessment activities are complete. XTO requests NFA for RP Number 2RP-5412.

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

Sincerely,
LT ENVIRONMENTAL, INC.

Christa-Marie Leibli, P.G.
Senior Hydrogeologist

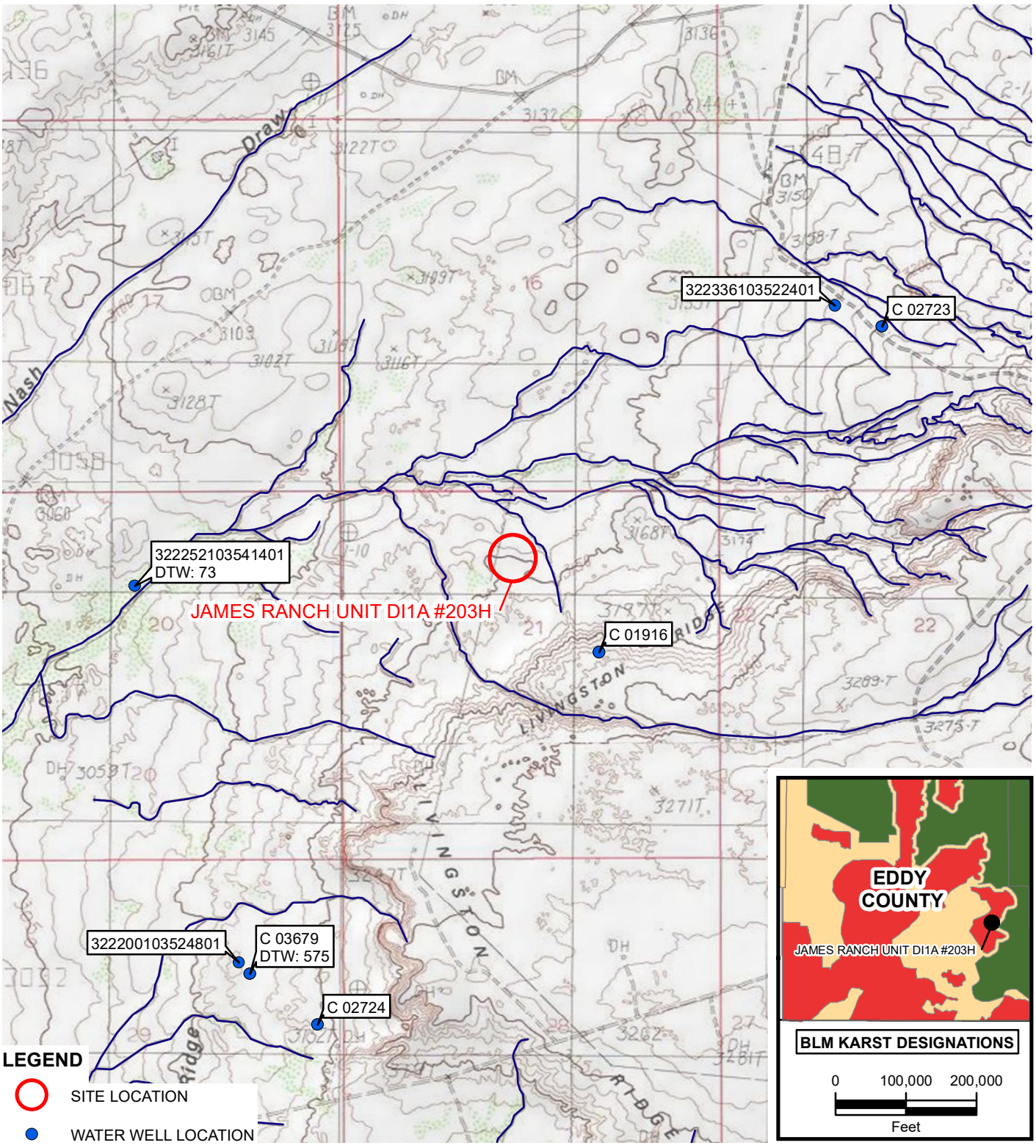
Ashley L. Ager, P.G.
Senior Geologist

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

Appendices:

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

FIGURES



LEGEND

- SITE LOCATION
- WATER WELL LOCATION
- NATIONAL HYDROGRAPHY DATASET SURFACE WATER FEATURE
- NATIONAL WETLANDS INVENTORY SURFACE WATER FEATURE
- LOW KARST
- MEDIUM KARST
- HIGH KARST

NOTE: REMEDIATION PERMIT NUMBER 2RP-5412
DTW: DEPTH TO WATER IN FEET

FIGURE 1
SITE LOCATION MAP
JAMES RANCH UNIT DI1A #203H
UNIT F SEC 21 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919076_JRU DI 1A #203H\012919076_FIG01_SL_5412.mxd

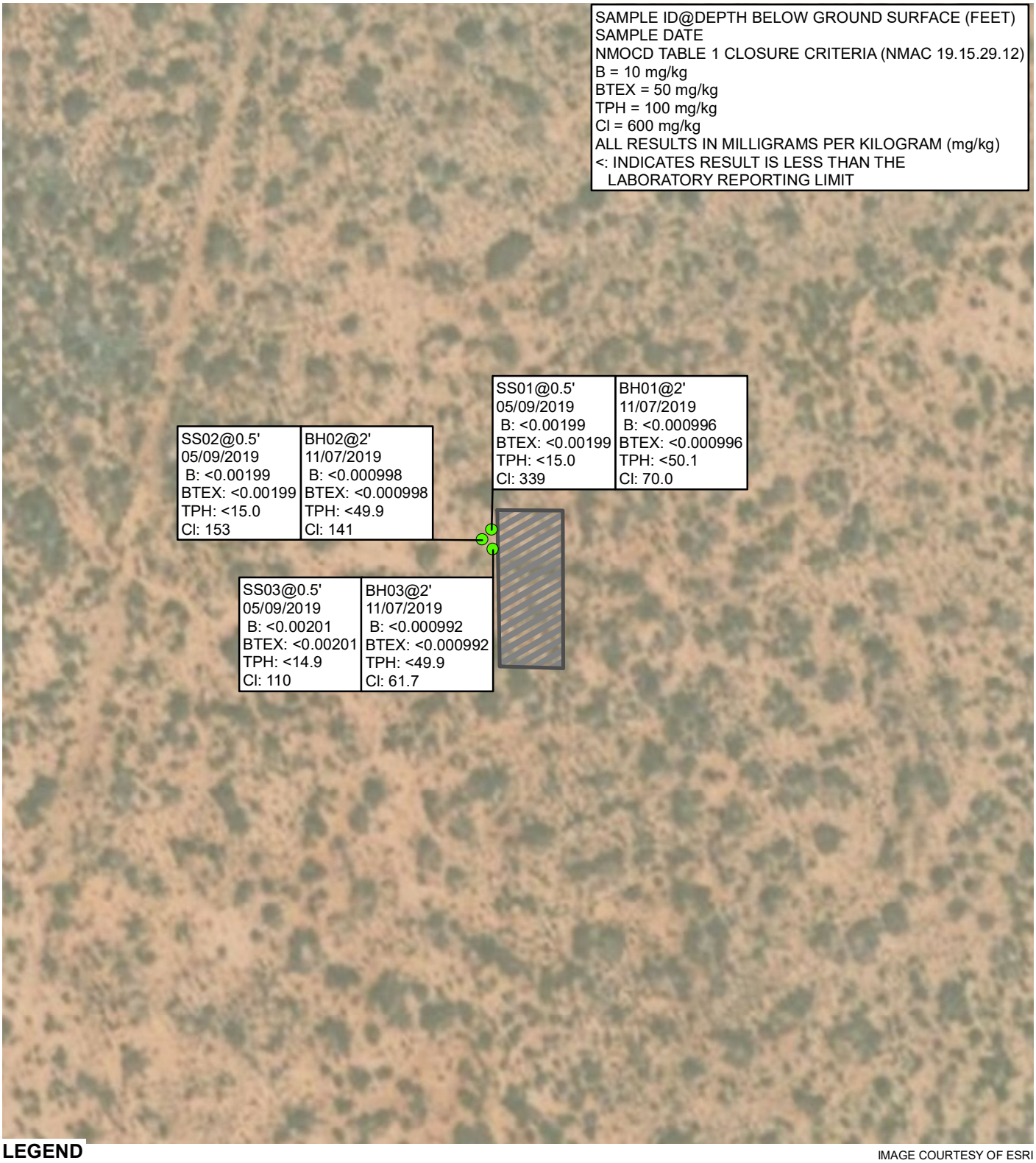


FIGURE 2
SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT DI1A #203H
UNIT F SEC 21 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919076_JRU DI 1A #203H\012919076_FIG02_SS LOC_5412.mxd

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS

JAMES RANCH UNIT DI1A #203H
REMEDIATION PERMIT NUMBER 2RP-5412
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	NE	**100**	**600**
SS01	0.5	05/09/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	339
BH01	2.0	11/07/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<50.1	<50.1	<50.1	<50.1	<50.1	70.0
SS02	0.5	05/09/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	153
BH02	2.0	11/07/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<49.9	<49.9	<49.9	<49.9	<49.9	141
SS03	0.5	05/09/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	110
BH03	2.0	11/07/2019	<0.000992	<0.000992	<0.000992	<0.000992	<0.000992	<49.9	<49.9	<49.9	<49.9	<49.9	61.7

Notes:

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

ATTACHMENT 1: LITHOLOGIC / SOIL SAMPLING LOGS

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

Identifier: BH01	Date: 11/7/19
Project Name: JRU 01 1A 203	RP Number: 2RP-5412
Logged By: Ellie N	Method: Hand Auger
Hole Diameter: 2in	Total Depth: 25ft

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:
Field Screening: Chloride & TPH
Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	210	6.1	N		1 2 3 4 6 8 10 12 14 16 18 20 12	25ft	S	sand trace silt, brown, no odor

0920

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

Identifier: BH02	Date: 11/7/19
Project Name: JRU PI 1A 203	RP Number: 2RP-5412
Logged By: Ellie	Method: Hand Auger
Hole Diameter: 2in	Total Depth: 25ft

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:
Field Screening: Chloride & TPH
Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	112	0.3	N		1 2 3 4 6 8 10 12 14 16 18 20 12	25ft	S	1005 Sand, trace silt & clay, brown, no odor

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

Identifier:	Date:
BH03	11/7/19
Project Name:	RP Number:
JRU DI 1A 203	2RP-5412
Logged By: Ellie N	Method: Hand Auger
Hole Diameter: 2in	Total Depth: 25ft

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: Chloride + TPH

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	>112	0.1	N		1 2 3 4 6 8 10 12 14 16 18 20 12	2ft	S	sand, trace silt/clay, brown, no odor

1050

ATTACHMENT 2: PHOTOGRAPHIC LOG

Southern view of release area during site assessment activities.

Project: 012919076	XTO Energy, Inc. JAMES RANCH UNIT DI1A #203H	LTE Advancing Opportunity
November 7, 2019	Photographic Log	

Northern view of release area during site assessment activities.

Project: 012919076	XTO Energy, Inc. JAMES RANCH UNIT DI1A #203H	LTE Advancing Opportunity
November 7, 2019	Photographic Log	

ATTACHMENT 3: LABORATORY ANALYTICAL REPORTS

Analytical Report 624023

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU DI 1 #203H

15-MAY-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

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

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

15-MAY-19

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

Reference: XENCO Report No(s): **624023**
JRU DI 1 #203H
Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 624023. 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. 624023 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 624023

LT Environmental, Inc., Arvada, CO

JRU DI 1 #203H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	05-09-19 14:05	.5 ft	624023-001
SS02	S	05-09-19 14:10	.5 ft	624023-002
SS03	S	05-09-19 14:20	.5 ft	624023-003

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU DI 1 #203H

Project ID:
Work Order Number(s): *624023*

Report Date: *15-MAY-19*
Date Received: *05/13/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3089058 BTEX by EPA 8021B

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

Certificate of Analysis Summary 624023

LT Environmental, Inc., Arvada, CO

Project Name: JRU DI 1 #203H

Project Id:
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Mon May-13-19 10:50 am
Report Date: 15-MAY-19
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	624023-001		624023-002		624023-003					
	Field Id:	SS01		SS02		SS03					
	Depth:	.5- ft		.5- ft		.5- ft					
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	May-09-19 14:05		May-09-19 14:10		May-09-19 14:20					
BTEX by EPA 8021B	***Extracted:***	May-14-19 15:00		May-14-19 15:00		May-14-19 15:00					
	Analyzed:	May-15-19 04:06		May-15-19 04:25		May-15-19 04:44					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201				
Toluene		<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201				
Ethylbenzene		<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201				
m,p-Xylenes		<0.00398	0.00398	<0.00398	0.00398	<0.00402	0.00402				
o-Xylene		<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201				
Total Xylenes		<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201				
Total BTEX		<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201				
Chloride by EPA 300	***Extracted:***	May-14-19 10:00		May-14-19 10:00		May-14-19 10:00					
	Analyzed:	May-14-19 15:00		May-14-19 15:07		May-14-19 14:46					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		339	25.0	153	25.0	110	25.1				
TPH by SW8015 Mod	***Extracted:***	May-13-19 17:00		May-13-19 17:00		May-13-19 17:00					
	Analyzed:	May-14-19 03:56		May-14-19 04:17		May-14-19 04:37					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<14.9	14.9				
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<14.9	14.9				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<14.9	14.9				
Total TPH		<15.0	15.0	<15.0	15.0	<14.9	14.9				
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<14.9	14.9				

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

Jessica Kramer
Project Assistant

Certificate of Analytical Results 624023

LT Environmental, Inc., Arvada, CO

JRU DI 1 #203H

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	05.13.19 10.50
Lab Sample Id:	624023-001	Date Collected:	05.09.19 14.05	Sample Depth:	.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.14.19 10.00	Basis:	Wet Weight
Seq Number:	3088959				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**339**	25.0	mg/kg	05.14.19 15.00		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.13.19 17.00	Basis:	Wet Weight
Seq Number:	3088961				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.14.19 03.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.14.19 03.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.14.19 03.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.14.19 03.56	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.14.19 03.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	05.14.19 03.56	
o-Terphenyl	84-15-1	100	%	70-135	05.14.19 03.56	

Certificate of Analytical Results 624023

LT Environmental, Inc., Arvada, CO

JRU DI 1 #203H

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	05.13.19 10.50
Lab Sample Id:	624023-001	Date Collected:	05.09.19 14.05	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.14.19 15.00	Basis:	Wet Weight
Seq Number:	3089058				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.15.19 04.06	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.15.19 04.06	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.15.19 04.06	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.15.19 04.06	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.15.19 04.06	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.15.19 04.06	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.15.19 04.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	05.15.19 04.06	
4-Bromofluorobenzene	460-00-4	98	%	70-130	05.15.19 04.06	

Certificate of Analytical Results 624023

LT Environmental, Inc., Arvada, CO

JRU DI 1 #203H

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	05.13.19 10.50
Lab Sample Id:	624023-002	Date Collected:	05.09.19 14.10	Sample Depth:	.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.14.19 10.00	Basis:	Wet Weight
Seq Number:	3088959				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**153**	25.0	mg/kg	05.14.19 15.07		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.13.19 17.00	Basis:	Wet Weight
Seq Number:	3088961				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.14.19 04.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.14.19 04.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.14.19 04.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.14.19 04.17	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.14.19 04.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	05.14.19 04.17	
o-Terphenyl	84-15-1	100	%	70-135	05.14.19 04.17	

Certificate of Analytical Results 624023

LT Environmental, Inc., Arvada, CO

JRU DI 1 #203H

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	05.13.19 10.50
Lab Sample Id:	624023-002	Date Collected:	05.09.19 14.10	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.14.19 15.00	Basis:	Wet Weight
Seq Number:	3089058				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.15.19 04.25	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.15.19 04.25	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.15.19 04.25	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.15.19 04.25	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.15.19 04.25	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.15.19 04.25	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.15.19 04.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	05.15.19 04.25	
4-Bromofluorobenzene	460-00-4	105	%	70-130	05.15.19 04.25	

Certificate of Analytical Results 624023

LT Environmental, Inc., Arvada, CO

JRU DI 1 #203H

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	05.13.19 10.50
Lab Sample Id:	624023-003	Date Collected:	05.09.19 14.20	Sample Depth:	.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.14.19 10.00	Basis:	Wet Weight
Seq Number:	3088959				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**110**	25.1	mg/kg	05.14.19 14.46		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.13.19 17.00	Basis:	Wet Weight
Seq Number:	3088961				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	05.14.19 04.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	05.14.19 04.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	05.14.19 04.37	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	05.14.19 04.37	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	05.14.19 04.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	05.14.19 04.37	
o-Terphenyl	84-15-1	100	%	70-135	05.14.19 04.37	

Certificate of Analytical Results 624023

LT Environmental, Inc., Arvada, CO

JRU DI 1 #203H

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	05.13.19 10.50
Lab Sample Id:	624023-003	Date Collected:	05.09.19 14.20	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.14.19 15.00	Basis:	Wet Weight
Seq Number:	3089058				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.15.19 04.44	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.15.19 04.44	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.15.19 04.44	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.15.19 04.44	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.15.19 04.44	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.15.19 04.44	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.15.19 04.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	05.15.19 04.44	
1,4-Difluorobenzene	540-36-3	100	%	70-130	05.15.19 04.44	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 624023

LT Environmental, Inc.

JRU DI 1 #203H

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3088959 Matrix: Solid Date Prep: 05.14.19
MB Sample Id: 7677804-1-BLK LCS Sample Id: 7677804-1-BKS LCSD Sample Id: 7677804-1-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	247	99	249	100	90-110	1	20	mg/kg	05.14.19 10:54	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3088959 Matrix: Soil Date Prep: 05.14.19
Parent Sample Id: 623921-002 MS Sample Id: 623921-002 S MSD Sample Id: 623921-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	642	250	822	72	806	66	90-110	2	20	mg/kg	05.14.19 11:16	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3088959 Matrix: Soil Date Prep: 05.14.19
Parent Sample Id: 624051-002 MS Sample Id: 624051-002 S MSD Sample Id: 624051-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1010	251	1200	76	1210	80	90-110	1	20	mg/kg	05.14.19 13:58	X

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3088961 Matrix: Solid Date Prep: 05.13.19
MB Sample Id: 7677810-1-BLK LCS Sample Id: 7677810-1-BKS LCSD Sample Id: 7677810-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1010	101	1010	101	70-135	0	20	mg/kg	05.13.19 19:28	
Diesel Range Organics (DRO)	<8.13	1000	1020	102	1050	105	70-135	3	20	mg/kg	05.13.19 19:28	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		122		127		70-135	%	05.13.19 19:28
o-Terphenyl	101		128		125		70-135	%	05.13.19 19:28

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 624023

LT Environmental, Inc.

JRU DI 1 #203H

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3088961 | Matrix: Soil | Date Prep: 05.13.19
Parent Sample Id: 624018-001 | MS Sample Id: 624018-001 S | MSD Sample Id: 624018-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	11.3	1000	1010	100	1020	101	70-135	1	20	mg/kg	05.13.19 20:29	
Diesel Range Organics (DRO)	<8.13	1000	1020	102	1010	101	70-135	1	20	mg/kg	05.13.19 20:29	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		121		70-135	%	05.13.19 20:29
o-Terphenyl	114		128		70-135	%	05.13.19 20:29

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3089058 | Matrix: Solid | Date Prep: 05.14.19
MB Sample Id: 7677870-1-BLK | LCS Sample Id: 7677870-1-BKS | LCSD Sample Id: 7677870-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000384	0.0998	0.110	110	0.111	111	70-130	1	35	mg/kg	05.14.19 21:49	
Toluene	<0.000455	0.0998	0.102	102	0.103	103	70-130	1	35	mg/kg	05.14.19 21:49	
Ethylbenzene	<0.000564	0.0998	0.107	107	0.107	107	70-130	0	35	mg/kg	05.14.19 21:49	
m,p-Xylenes	<0.00101	0.200	0.221	111	0.222	111	70-130	0	35	mg/kg	05.14.19 21:49	
o-Xylene	<0.000344	0.0998	0.107	107	0.109	109	70-130	2	35	mg/kg	05.14.19 21:49	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		102		103		70-130	%	05.14.19 21:49
4-Bromofluorobenzene	82		97		99		70-130	%	05.14.19 21:49

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3089058 | Matrix: Soil | Date Prep: 05.14.19
Parent Sample Id: 623942-002 | MS Sample Id: 623942-002 S | MSD Sample Id: 623942-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000504	0.100	0.0963	96	0.0994	99	70-130	3	35	mg/kg	05.14.19 22:27	
Toluene	<0.000457	0.100	0.0873	87	0.0912	92	70-130	4	35	mg/kg	05.14.19 22:27	
Ethylbenzene	<0.000566	0.100	0.0884	88	0.0932	94	70-130	5	35	mg/kg	05.14.19 22:27	
m,p-Xylenes	<0.00102	0.200	0.181	91	0.193	97	70-130	6	35	mg/kg	05.14.19 22:27	
o-Xylene	0.000474	0.100	0.0879	87	0.0934	93	70-130	6	35	mg/kg	05.14.19 22:27	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		103		70-130	%	05.14.19 22:27
4-Bromofluorobenzene	101		102		70-130	%	05.14.19 22:27

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

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

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

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

XENCO LABORATORIES

Chain of Custody

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: 624073

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

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 DI 1 #203H	Turn Around	
Project Number:		Routine	☑
P.O. Number:	Spill date - 4/21/19	Rush:	
Sampler's Name:	Garrett Green	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.5/0.4		Thermometer ID:	R8
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes No N/A		Correction Factor:	-0.1
Sample Custody Seals:	Yes No N/A		Total Containers:	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	Sample Comments
SS01	S	5/9/19	1405	.5'	1	X	X	X	
SS02	S	↓	1410	↓	1	X	X	X	
SS03	S	↓	1420	↓	1	X	X	X	

Work Order Notes

32.381675,
-103.886826

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

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

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time		Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	[signature]	[signature]	05/10/2019 13:00	2	[signature]	[signature]	05/10/2019 12:30
3				4			5/13/19 1050
5				6			

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 05/13/2019 10:50:00 AM

Work Order #: 624023

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 05/13/2019

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 05/13/2019

Jessica Kramer

Analytical Report 642502

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU DI 1A 203 H

012919076

30-DEC-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

30-DEC-19

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

Reference: XENCO Report No(s): **642502**
JRU DI 1A 203 H
Project Address: Eddy County

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 642502. 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. 642502 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,

Holly Taylor

Holly Taylor
Project Manager

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 642502

LT Environmental, Inc., Arvada, CO

JRU DI 1A 203 H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	11-07-19 09:20	2.0 ft	642502-001
BH02	S	11-07-19 10:05	2.0 ft	642502-002
BH03	S	11-07-19 10:50	2.0 ft	642502-003

CASE NARRATIVE

Client Name: LT Environmental, Inc.
Project Name: JRU DI 1A 203 H

Project ID: *012919076*
Work Order Number(s): *642502*

Report Date: *30-DEC-19*
Date Received: *11/07/2019*

Sample receipt non conformances and comments:

12/30/2019 1.001 Revised to report to change sample IDs per Kalei Jennings (email). HT

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3106825 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 642502

LT Environmental, Inc., Arvada, CO

Project Name: JRU DI 1A 203 H

Project Id: 012919076
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Thu Nov-07-19 12:50 pm
Report Date: 30-DEC-19
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	642502-001		642502-002		642502-003					
	Field Id:	BH01		BH02		BH03					
	Depth:	2.0- ft		2.0- ft		2.0- ft					
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	Nov-07-19 09:20		Nov-07-19 10:05		Nov-07-19 10:50					
BTEX by EPA 8021B	***Extracted:***	Nov-07-19 15:00		Nov-07-19 15:00		Nov-07-19 15:00					
	Analyzed:	Nov-07-19 15:39		Nov-07-19 16:00		Nov-07-19 17:15					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.000996	0.000996	<0.000998	0.000998	<0.000992	0.000992				
Toluene		<0.000996	0.000996	<0.000998	0.000998	<0.000992	0.000992				
Ethylbenzene		<0.000996	0.000996	<0.000998	0.000998	<0.000992	0.000992				
m,p-Xylenes		<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198				
o-Xylene		<0.000996	0.000996	<0.000998	0.000998	<0.000992	0.000992				
Total Xylenes		<0.000996	0.000996	<0.000998	0.000998	<0.000992	0.000992				
Total BTEX		<0.000996	0.000996	<0.000998	0.000998	<0.000992	0.000992				
Chloride by EPA 300	***Extracted:***	Nov-07-19 15:00		Nov-07-19 15:00		Nov-07-19 15:00					
	Analyzed:	Nov-07-19 16:21		Nov-07-19 16:27		Nov-07-19 16:33					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		70.0	10.1	141	50.3	61.7	10.0				
TPH by SW8015 Mod	***Extracted:***	Nov-07-19 14:00		Nov-07-19 14:00		Nov-07-19 14:00					
	Analyzed:	Nov-07-19 18:20		Nov-07-19 18:40		Nov-07-19 18:59					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<50.1	50.1	<49.9	49.9	<49.9	49.9				
Diesel Range Organics (DRO)		<50.1	50.1	<49.9	49.9	<49.9	49.9				
Motor Oil Range Hydrocarbons (MRO)		<50.1	50.1	<49.9	49.9	<49.9	49.9				
Total GRO-DRO		<50.1	50.1	<49.9	49.9	<49.9	49.9				
Total TPH		<50.1	50.1	<49.9	49.9	<49.9	49.9				

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

Holly Taylor
Project Manager

Certificate of Analytical Results 642502

LT Environmental, Inc., Arvada, CO

JRU DI 1A 203 H

Sample Id:	**BH01**	Matrix:	Soil	Date Received:	11.07.19 12.50
Lab Sample Id:	642502-001	Date Collected:	11.07.19 09.20	Sample Depth:	2.0 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.07.19 15.00	Basis:	Wet Weight
Seq Number:	3106808				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**70.0**	10.1	mg/kg	11.07.19 16.21		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.07.19 14.00	Basis:	Wet Weight
Seq Number:	3106833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.07.19 18.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.07.19 18.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.07.19 18.20	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.07.19 18.20	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.07.19 18.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	11.07.19 18.20	
o-Terphenyl	84-15-1	104	%	70-135	11.07.19 18.20	

Certificate of Analytical Results 642502

LT Environmental, Inc., Arvada, CO

JRU DI 1A 203 H

Sample Id:	**BH01**	Matrix:	Soil	Date Received:	11.07.19 12.50
Lab Sample Id:	642502-001	Date Collected:	11.07.19 09.20	Sample Depth:	2.0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.07.19 15.00	Basis:	Wet Weight
Seq Number:	3106825				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	11.07.19 15.39	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	11.07.19 15.39	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	11.07.19 15.39	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.07.19 15.39	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	11.07.19 15.39	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	11.07.19 15.39	U	1
Total BTEX		<0.000996	0.000996	mg/kg	11.07.19 15.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.07.19 15.39	
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.07.19 15.39	

Certificate of Analytical Results 642502

LT Environmental, Inc., Arvada, CO

JRU DI 1A 203 H

Sample Id:	**BH02**	Matrix:	Soil	Date Received:	11.07.19 12.50
Lab Sample Id:	642502-002	Date Collected:	11.07.19 10.05	Sample Depth:	2.0 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.07.19 15.00	Basis:	Wet Weight
Seq Number:	3106808				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**141**	50.3	mg/kg	11.07.19 16.27		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.07.19 14.00	Basis:	Wet Weight
Seq Number:	3106833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.07.19 18.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.07.19 18.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.07.19 18.40	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.07.19 18.40	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.07.19 18.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	11.07.19 18.40	
o-Terphenyl	84-15-1	100	%	70-135	11.07.19 18.40	

Certificate of Analytical Results 642502

LT Environmental, Inc., Arvada, CO

JRU DI 1A 203 H

Sample Id:	**BH02**	Matrix:	Soil	Date Received:	11.07.19 12.50
Lab Sample Id:	642502-002	Date Collected:	11.07.19 10.05	Sample Depth:	2.0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.07.19 15.00	Basis:	Wet Weight
Seq Number:	3106825				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.07.19 16.00	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.07.19 16.00	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.07.19 16.00	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.07.19 16.00	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.07.19 16.00	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.07.19 16.00	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.07.19 16.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	11.07.19 16.00	
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.07.19 16.00	

Certificate of Analytical Results 642502

LT Environmental, Inc., Arvada, CO

JRU DI 1A 203 H

Sample Id:	**BH03**	Matrix:	Soil	Date Received:	11.07.19 12.50
Lab Sample Id:	642502-003	Date Collected:	11.07.19 10.50	Sample Depth:	2.0 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.07.19 15.00	Basis:	Wet Weight
Seq Number:	3106808				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**61.7**	10.0	mg/kg	11.07.19 16.33		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.07.19 14.00	Basis:	Wet Weight
Seq Number:	3106833				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.07.19 18.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.07.19 18.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.07.19 18.59	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.07.19 18.59	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.07.19 18.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	11.07.19 18.59	
o-Terphenyl	84-15-1	103	%	70-135	11.07.19 18.59	

Certificate of Analytical Results 642502

LT Environmental, Inc., Arvada, CO

JRU DI 1A 203 H

Sample Id:	**BH03**	Matrix:	Soil	Date Received:	11.07.19 12.50
Lab Sample Id:	642502-003	Date Collected:	11.07.19 10.50	Sample Depth:	2.0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.07.19 15.00	Basis:	Wet Weight
Seq Number:	3106825				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000992	0.000992	mg/kg	11.07.19 17.15	U	1
Toluene	108-88-3	<0.000992	0.000992	mg/kg	11.07.19 17.15	U	1
Ethylbenzene	100-41-4	<0.000992	0.000992	mg/kg	11.07.19 17.15	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.07.19 17.15	U	1
o-Xylene	95-47-6	<0.000992	0.000992	mg/kg	11.07.19 17.15	U	1
Total Xylenes	1330-20-7	<0.000992	0.000992	mg/kg	11.07.19 17.15	U	1
Total BTEX		<0.000992	0.000992	mg/kg	11.07.19 17.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.07.19 17.15	
4-Bromofluorobenzene	460-00-4	108	%	70-130	11.07.19 17.15	

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 642502

LT Environmental, Inc.

JRU DI 1A 203 H

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3106808 Matrix: Solid Date Prep: 11.07.19
MB Sample Id: 7689791-1-BLK LCS Sample Id: 7689791-1-BKS LCSD Sample Id: 7689791-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	255	102	255	102	90-110	0	20	mg/kg	11.07.19 15:04	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3106808 Matrix: Soil Date Prep: 11.07.19
Parent Sample Id: 642396-009 MS Sample Id: 642396-009 S MSD Sample Id: 642396-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	31.9	201	257	112	257	111	90-110	0	20	mg/kg	11.07.19 15:22	X

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3106833 Matrix: Solid Date Prep: 11.07.19
MB Sample Id: 7689882-1-BLK LCS Sample Id: 7689882-1-BKS LCSD Sample Id: 7689882-1-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	817	82	817	82	70-135	0	35	mg/kg	11.07.19 14:44	
Diesel Range Organics (DRO)	<50.0	1000	920	92	900	90	70-135	2	35	mg/kg	11.07.19 14:44	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		107		118		70-135	%	11.07.19 14:44
o-Terphenyl	121		109		109		70-135	%	11.07.19 14:44

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3106833 Matrix: Solid Date Prep: 11.07.19
MB Sample Id: 7689882-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.07.19 14:25	

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

QC Summary 642502

LT Environmental, Inc.

JRU DI 1A 203 H

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3106833 — Matrix: Soil — Date Prep: 11.07.19
Parent Sample Id: 642396-008 — MS Sample Id: 642396-008 S — MSD Sample Id: 642396-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	894	89	862	86	70-135	4	35	mg/kg	11.07.19 15:44	
Diesel Range Organics (DRO)	<50.2	1000	963	96	950	95	70-135	1	35	mg/kg	11.07.19 15:44	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		114		70-135	%	11.07.19 15:44
o-Terphenyl	119		119		70-135	%	11.07.19 15:44

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3106825 — Matrix: Solid — Date Prep: 11.07.19
MB Sample Id: 7689858-1-BLK — LCS Sample Id: 7689858-1-BKS — LCSD Sample Id: 7689858-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.107	107	0.105	105	70-130	2	35	mg/kg	11.07.19 11:00	
Toluene	<0.00100	0.100	0.124	124	0.119	119	70-130	4	35	mg/kg	11.07.19 11:00	
Ethylbenzene	<0.00100	0.100	0.111	111	0.108	108	71-129	3	35	mg/kg	11.07.19 11:00	
m,p-Xylenes	<0.00200	0.200	0.225	113	0.220	110	70-135	2	35	mg/kg	11.07.19 11:00	
o-Xylene	<0.00100	0.100	0.112	112	0.110	110	71-133	2	35	mg/kg	11.07.19 11:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		102		102		70-130	%	11.07.19 11:00
4-Bromofluorobenzene	105		104		106		70-130	%	11.07.19 11:00

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3106825 — Matrix: Soil — Date Prep: 11.07.19
Parent Sample Id: 642396-008 — MS Sample Id: 642396-008 S — MSD Sample Id: 642396-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00101	0.101	0.113	112	0.0880	87	70-130	25	35	mg/kg	11.07.19 11:41	
Toluene	<0.00101	0.101	0.121	120	0.0934	92	70-130	26	35	mg/kg	11.07.19 11:41	
Ethylbenzene	<0.00101	0.101	0.119	118	0.0870	86	71-129	31	35	mg/kg	11.07.19 11:41	
m,p-Xylenes	<0.00201	0.201	0.241	120	0.176	87	70-135	31	35	mg/kg	11.07.19 11:41	
o-Xylene	<0.00101	0.101	0.120	119	0.0878	87	71-133	31	35	mg/kg	11.07.19 11:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		104		70-130	%	11.07.19 11:41
4-Bromofluorobenzene	112		113		70-130	%	11.07.19 11:41

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

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: 642502

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Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, Tx 79705	City, State ZIP:	
Phone:	(432) 236-3849 Email:		enaka@ltenv.com, dmoir@ltenv.com

Work Order Comments

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

Project Name:	JRU DI 1A 203H	Turn Around	
Project Number:	012919076	Routine ☐	
P.O. Number:	Eddy County	Rush: 24 hours	
Sampler's Name:	Elizabeth Naka	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	Yes (No)	
Temperature (°C):	1.2	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:	3	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
SS01A	S	11/7/19	0920	2.08'	1	X	X	X
SS02A	↓	↓	1005	↓	↓	↓	↓	↓
SS03A	↓	↓	1050	↓	↓	↓	↓	↓

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	Elizabeth Naka	Cassie	11/7/19 12:50	2		
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

Received by OCD: 1/17/2020 2:47:20 PM

Final 1.001

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11/07/2019 12:50:00 PM

Work Order #: 642502

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

Temperature Measuring device used : T-NM-007

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 11/07/2019

Checklist reviewed by: Jessica Kramer Date: 11/08/2019

Jessica Kramer