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	NCE2002857417
District RP	
Facility ID	
Application ID	

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

Location of Release Source

Latitude 32.202855 Longitude -103.831863
(NAD 83 in decimal degrees to 5 decimal places)

Site Name PLU 15 TWR PLU C1 FRAC Pond	Site Type Well Location
Date Release Discovered 11/19/2019	API# *(if applicable)* 30-015-29847 (Poker Lake 139)

Unit Letter	Section	Township	Range	County
J	24	24S	30E	EDDY

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls) 0.0	Volume Recovered (bbls) 0.0
☐ Produced Water	Volume Released (bbls) 0.0	Volume Recovered (bbls) 0.0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☒ Other (describe) Recycled / fresh water	Volume/Weight Released (provide units) 171.50 bbls	Volume/Weight Recovered (provide units) 5 bbls

Cause of Release: A 12 inch poly transfer line had a pin hole caused by vibrations which allowed fluid to be released. Approximately 171.59 bbls was lost and a vacuum truck recovered 5 bbls. Additional third party resources have been retained to assist in the remediation.

State of New Mexico
Oil Conservation Division

Incident ID	NCE2002857417
District RP	
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Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? YES, - An unauthorized release of fluid over 25 barrels.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
YES, by Amy Ruth : Mike Bratcher; Rob Hamlet; Victoria Venegas; "Griswold, Jim, EMNRD"; blm_nm_cfo_spill@blm.gov; Crisha Morgan : emailed November 20, 2019 at 9:29 AM.

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: 11/22/2019

email: Kyle_Littrell@xtoenergy.com Telephone:

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	NCE2002857417
District RP	
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	NCE2002857417
District RP	
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: 04/17/20

email: Kyle_Littrell@xtoenergy.com Telephone:

OCD Only

Received by: Cristina Eads Date: 04/17/2020

Incident ID	NCE2002857417
District RP	
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: 04/17/20

email: Kyle_Littrell@xtoenergy.com Telephone:

OCD Only

Received by: Cristina Eads Date: 04/17/2020

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: D e n i e d Date: 06/23/2020

Printed Name: Cristina Eads Title: Environmental Specialist

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

April 17, 2020

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

RE: Closure Request
PLU 15 TWR PLU C1 FRAC Pond
Incident Number NCE2002857417
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 PLU TWR PLU C1 Frac Pond (Site) in Unit J, Section 24, Township 24 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 mixed recycled and fresh 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 Incident Number NCE2002857417.

RELEASE BACKGROUND

On November 19, 2019, a pin hole was discovered in a 12-inch poly transfer line, which allowed fluid to be released. The hole in the transfer line resulted in the release of approximately 171.59 barrels (bbls) of mixed recycled and fresh water onto the frac pond liner to the east and followed the surface gradient off the pad and into the adjoining pasture. A vacuum truck was dispatched to the Site to recover freestanding fluid. Approximately 5 bbls of liquids were recovered. XTO reported the release immediately to the New Mexico Oil Conservation Division (NMOCD) and the Bureau of Land Management (BLM) via email on November 20, 2019. XTO reported the release to NMOCD on a Release Notification and Corrective Action Form C-141 (Form C-141) on November 22, 2019 and was subsequently issued Incident Number NCE2002857417.

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 groundwater well data. The nearest permitted groundwater well to the Site is New Mexico Office of the State Engineer (NMOSE) well number C 03702 located

approximately 1,050 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 NMOSE well number C 02110, located approximately 1.3 miles southwest of the Site. The water well has a depth to groundwater of approximately 400 feet bgs and a total depth of 600 feet bgs. There are 7 wells within a 3.5-mile radius of the Site with similar depth to water measurements indicating depth to water is greater than 100 feet bgs. NMOSE well C 03960 was most recently sampled in November 2016 with a depth to groundwater of 250 feet. All wells used for depth to groundwater determination are depicted on Figure 1.

The closest continuously flowing water or significant watercourse to the Site is an emergent wetland located approximately 3,640 feet west 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 not underlain by unstable geology (low potential karst designation 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
- TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg;
- Total Petroleum Hydrocarbons (TPH): 2,500 mg/kg
- Chloride: 20,000 mg/kg

Additionally, the reclamation standard of 600 mg/kg chloride was applied to the undeveloped pasture that was impacted by the release, per NMAC 19.15.29.13.D (1) for the top 4 feet for areas to be reclaimed immediately following remediation.

SITE ASSESSMENT AND SOIL SAMPLING ACTIVITIES

On December 4, 2019, LTE personnel evaluated the release extent based on information provided on the Form C-141 and visual observations. LTE personnel collected nine preliminary soil samples (SS01 through SS09) within the release extent at a depth of approximately 0.5 feet bgs to assess the presence or absence of soil impacts at the ground surface. Soil samples SS01, SS03, and SS04 were collected at the base of the frac ponds near the release location and were underlain by an intact liner. Soil sample SS02, also at the base of the frac ponds, was collected at the location of a visible tear in the liner to assess the presence or absence of contamination below the liner. Soil samples SS05 through SS09 were collected in the pasture, located east of the frac ponds.

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. Photographic documentation was conducted during the Site visit. A photographic log is included in Attachment 1.

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 Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH- GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D, and chloride following EPA Method 300.0.

Laboratory analytical results indicated benzene, BTEX, TPH GRO and TPH DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in soil samples SS01 through SS09. Based on laboratory analytical results for preliminary soil samples SS05 through SS09), soil within the pasture exceeded the reclamation requirement for chloride concentrations in the top 4 feet of the subsurface and excavation of waste containing soil was warranted. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 2.

DELINEATION ACTIVITIES

On January 22, 2020, LTE personnel returned to the Site to oversee delineation activities. Potholes PH01 through PH05 were advanced at five locations via track hoe within the release extent in the pasture east of the frac ponds to depths ranging from approximately 1 foot to 4 feet bgs. Soil from the five potholes was field screened utilizing a PID and Hach® chloride QuanTab® test strips. Field screening results and observations for each pothole were logged on lithologic. soil sampling logs which are included in Attachment 3. The delineation soil sample locations are depicted on Figure 3. The delineation soil samples were collected, handled and analyzed for chloride as described above and submitted to Xenco in Carlsbad, New Mexico.

Laboratory analytical results indicated soil in the vicinity of potholes PH03 through PH05 exceeded chloride concentrations acceptable for reclamation requirements. As such, excavation of waste-containing soil appeared warranted. However, the delineation potholes PH01 through PH05 provided vertical delineation in the deepest intervals with samples meeting the reclamation standard of chloride concentration less than 600 mg/kg. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 2.

EXCAVATION ACTIVITIES

Excavation of waste-containing soil was completed between January 22 and January 24, 2020. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride. Following removal of waste containing soil in the pasture, 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 SW13 were collected from the sidewalls of the excavation from depths ranging from ground surface to approximately 4 feet bgs. Composite soil samples FS01 through FS17 were collected from the floor of the excavation at depths ranging from approximately 1 foot to 4 feet bgs. The excavation soil samples were collected, handled and analyzed for chloride as described above and submitted to Xenco in Carlsbad, New Mexico. Photographic documentation was conducted during the Site visit. Photographs are included in Attachment 1.

Laboratory analytical results for soil in the vicinity of confirmation floor sample FS11 and sidewall sample SW08 indicated chloride concentrations continued exceeded the reclamation standard in the top 4 feet of soil. LTE personnel oversaw additional excavation on February 21, 2020 to remove additional waste-containing soil. The sidewall associated with confirmation sidewall SW08 was expanded to the west and the excavation floor associated with confirmation floor sample FS11 was cut an additional 1-foot.

Following removal of waste containing soil, LTE collected two additional 5-point composite soil samples, FS11A at approximately 3 feet bgs and SW13 collected at depths between approximately 1-foot to 3 feet bgs. The excavation soil samples were collected, handled and analyzed for chloride as described above and submitted to Xenco in Carlsbad, New Mexico. The final excavation extent and excavation soil sample locations are depicted on Figure 4.

Laboratory analytical results from the subsequent confirmation floor sample FS11A and sidewall sample SW13 indicated chloride concentrations in soil were compliant with the reclamation requirement. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 2.

Overall, the excavation extent in the pasture encompassed approximate 3,600 square feet and approximately 695 cubic yards of waste-containing soil were excavated and transported to a permitted land farm facility.

CONCLUSIONS

Initial and follow-up response efforts conducted after the release of mixed recycled and fresh water included removal of freestanding fluid via a hydrovac truck, collection of delineation soil samples, and removal of waste-containing soil. Laboratory analytical results for all soil samples indicated benzene, BTEX, TPH GRO and TPH DRO, TPH, and chloride concentrations were

compliant with the Closure Criteria; however, portions of the release extent in the pasture indicated chloride concentrations exceeded the reclamation requirement for waste-containing soil. As such, waste-containing soil was removed from the release extent in the pasture to depths ranging from approximately 1-foot to 4 feet bgs. Excavation composite samples indicate soil waste-containing material was removed within the top 4 feet in compliance with the reclamation requirement. A total of approximately 695 cubic yards of waste-containing soil was excavated and transported to a permitted land farm. In addition, delineation pothole samples indicate the entire release is delineated by the liner on pad and off pad to chloride concentrations of 600 mg/kg at a maximum depth of 4 feet bgs.

Laboratory analytical results for the delineation and confirmation soil samples collected from within and around the final excavation extent indicate benzene, BTEX, TPH-GRO and TPH-DRO, TPH, and chloride concentrations were compliant with the NMOCD Closure Criteria and chloride concentrations within the affected pasture were compliant with the reclamation requirement. As such, XTO respectfully requests NFA for Incident Number NCE2002857417.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Elizabeth A. Naka
Staff Environmental Scientist

Ashley L. Ager, P.G.
Senior Geologist

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

Appendices:

Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Delineation Soil Sample Locations
Figure 4	Excavation Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Photographic Log

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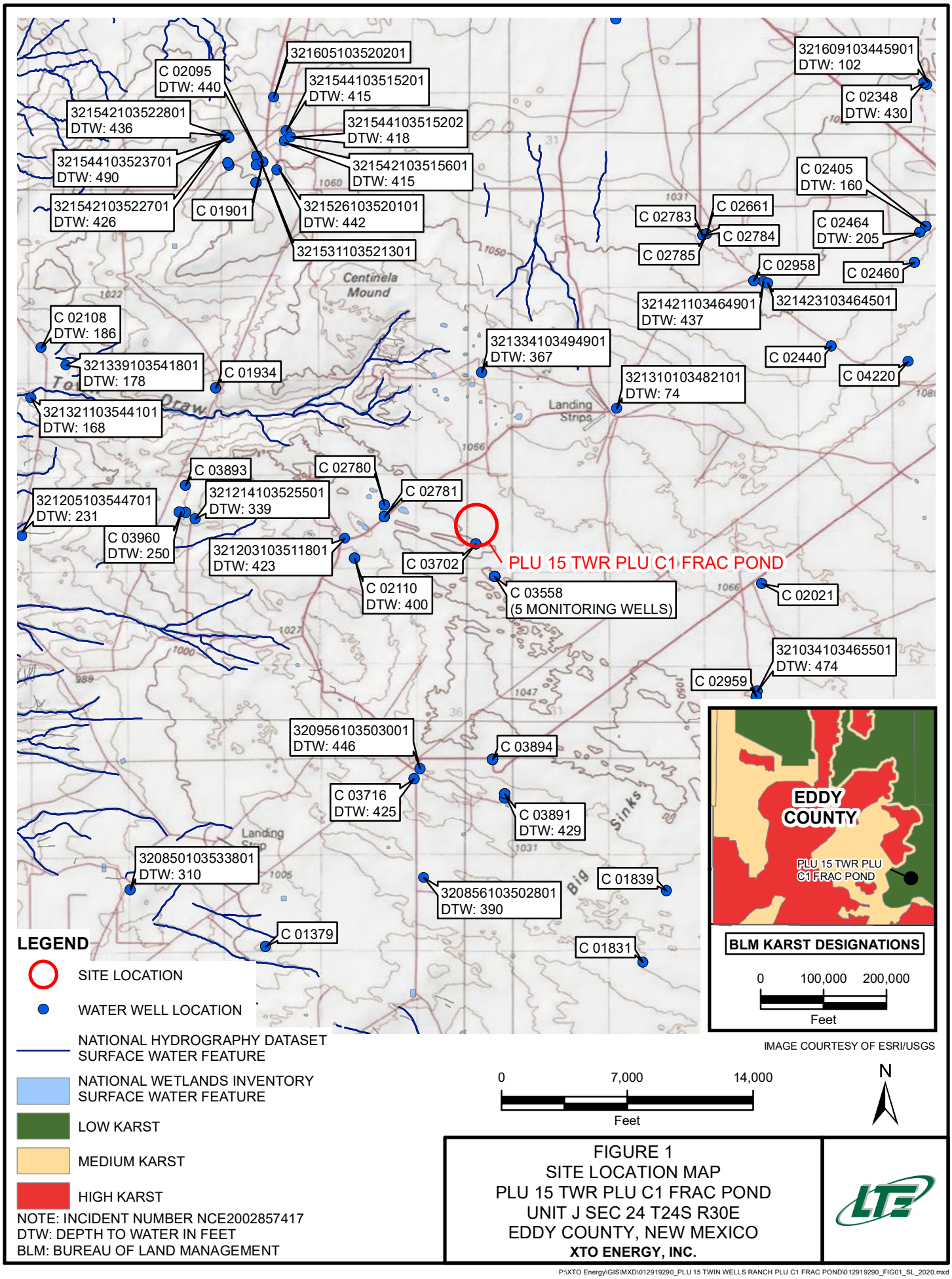
Attachment 2 Laboratory Analytical Results
Attachment 3 Lithologic/Soil Sampling Logs

FIGURES



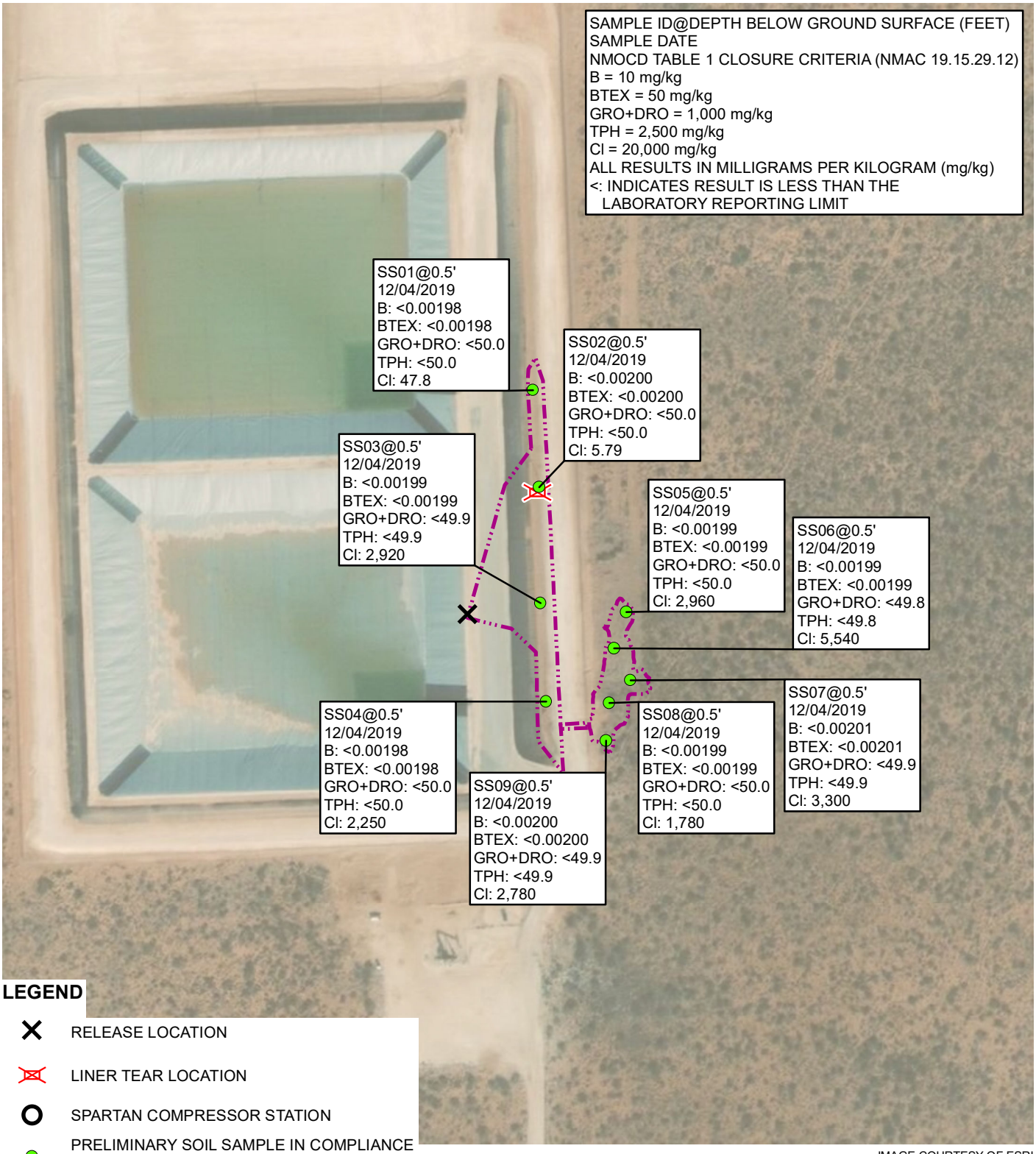
LEGEND

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

NOTE: INCIDENT NUMBER NCE2002857417
DTW: DEPTH TO WATER IN FEET
BLM: BUREAU OF LAND MANAGEMENT

FIGURE 1
SITE LOCATION MAP
PLU 15 TWR PLU C1 FRAC POND
UNIT J SEC 24 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919290_PLU 15 TWIN WELLS RANCH PLU C1 FRAC POND\012919290_FIG01_SL_2020.mxd



B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO: GASOLINE RANGE ORGANICS
DRO: DIESEL RANGE ORGANICS
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: INCIDENT NUMBER NCE2002857417

FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
PLU 15 TWR PLU C1 FRAC POND
UNIT J SEC 24 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919290_PLU 15 TWIN WELLS RANCH PLU C1 FRAC POND\012919290_FIG02_PRELIMINARY_2020.mxd

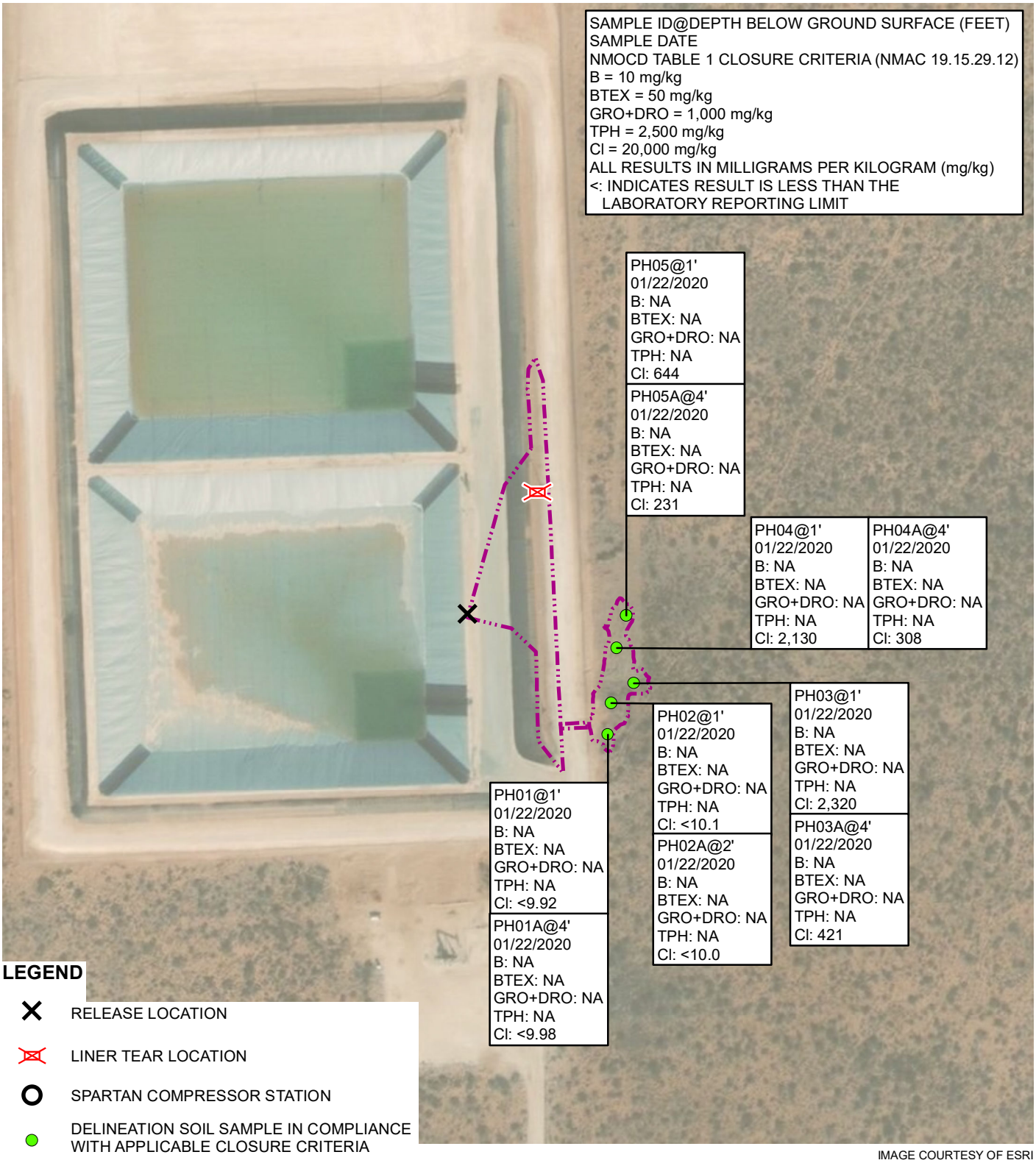
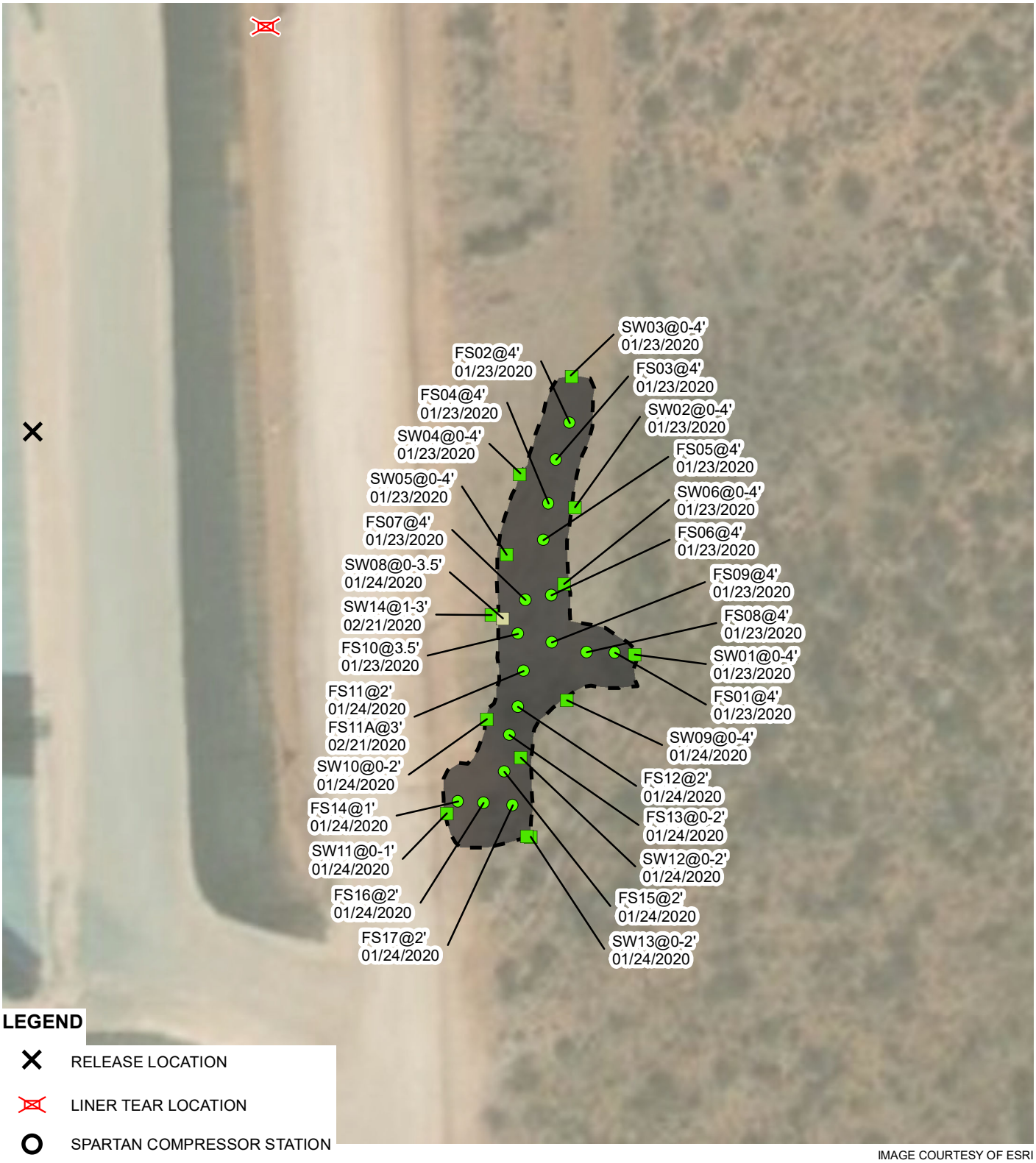


FIGURE 3
DELINEATION SOIL SAMPLE LOCATIONS
PLU 15 TWR PLU C1 FRAC POND
UNIT J SEC 24 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919290_PLU 15 TWIN WELLS RANCH PLU C1 FRAC POND\012919290_FIG03_DELINEATION_2020.mxd



LEGEND

- RELEASE LOCATION
- LINER TEAR LOCATION
- SPARTAN COMPRESSOR STATION
- SIDEWALL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- SIDEWALL SAMPLE WITH CONCENTRATIONS PREVIOUSLY EXCEEDING APPLICABLE CLOSURE CRITERIA AND HAS BEEN EXCAVATED
- FLOOR SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- EXCAVATION EXTENT

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
NOTE: INCIDENT NUMBER NCE2002857417

IMAGE COURTESY OF ESRI

0 60 120
Feet

N

FIGURE 4
EXCAVATION SOIL SAMPLE LOCATIONS
PLU 15 TWR PLU C1 FRAC POND
UNIT J SEC 24 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919290_PLU 15 TWIN WELLS RANCH PLU C1 FRAC POND\012919290_FIG04_EXCAVATION_2020_1.mxd

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS

PLU 15 TWR PLU C1 FRAC POND
INCIDENT NUMBER NCE2002857417
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**
SS01	0.5	12/04/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	47.8
SS02	0.5	12/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	5.79
SS03	0.5	12/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	2,920
SS04	0.5	12/04/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	2,250
SS05	0.5	12/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	2,960
SS06	0.5	12/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	5,540
SS07	0.5	12/04/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	3,300
SS08	0.5	12/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	1,780
SS09	0.5	12/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	2,780
PH01	1	01/22/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<9.92
PH01A	4	01/22/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<9.98
PH02	1	01/22/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10.1
PH02A	2	01/22/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10.0
PH03	1	01/22/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,320
PH03A	4	01/22/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	421
PH04	1	01/22/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,130
PH04A	4	01/22/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	308
PH05	1	01/22/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	644
PH05A	4	01/22/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	231
FS01	4	01/23/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	629
FS02	4	01/23/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	258
FS03	4	01/23/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	116
FS04	4	01/23/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	515

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TABLE 1
SOIL ANALYTICAL RESULTS

PLU 15 TWR PLU C1 FRAC POND
INCIDENT NUMBER NCE2002857417
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**
FS05	4	01/23/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	455
FS06	4	01/23/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	544
FS07	4	01/23/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	629
FS08	4	01/23/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,170
FS09	4	01/23/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	672
FS10	3.5	01/23/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	385
FS11	2	01/24/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1,140**
FS11A	3	02/21/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	177
FS12	2	01/24/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	153
FS13	1 - 2	01/24/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	190
FS14	1	01/24/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10.1
FS15	2	01/24/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.9
FS16	2	01/24/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<9.92
FS17	2	01/24/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	597
SW01	0 - 4	01/23/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	91.0
SW02	0 - 4	01/23/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	136
SW03	0 - 4	01/23/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	409
SW04	0 - 4	01/23/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	273
SW05	0 - 4	01/23/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	330
SW06	0 - 4	01/23/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	277
SW08	0 - 3.5	01/24/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**963**
SW09	0 - 4	01/24/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10.1

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TABLE 1
SOIL ANALYTICAL RESULTS

PLU 15 TWR PLU C1 FRAC POND
INCIDENT NUMBER NCE2002857417
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**
SW10	0 - 2	01/24/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	271
SW11	0 - 1	01/24/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	64.8
SW12	0 - 2	01/24/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.4
SW13	0 - 2	01/24/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	466
SW14	1 - 3	02/21/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	144

Notes:

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

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ATTACHMENT 1: PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

Photograph 1: View of hole in containment lining on east side of Frac Pond.

Photograph 2: View north of off-pad spill extent.

Photograph 3: View of on-pad spill extent facing south.

PHOTOGRAPHIC LOG

Photograph 4: View of northern half of off-pad excavation facing north.

Photograph 5: View of southern half of off-pad excavation facing southwest.

Photograph 6: View of off-pad excavation from the southernmost point.

ATTACHMENT 2: LABORATORY ANALYTICAL RESULTS

Analytical Report 645199

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU 15 TWR PLU C1

012919290

10-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)

10-DEC-19

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

Reference: XENCO Report No(s): **645199**
PLU 15 TWR PLU C1
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) 645199. 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. 645199 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 645199

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	12-04-19 13:40	0.5 ft	645199-001
SS02	S	12-04-19 13:45	0.5 ft	645199-002
SS03	S	12-04-19 13:50	0.5 ft	645199-003
SS04	S	12-04-19 13:55	0.5 ft	645199-004
SS05	S	12-04-19 14:20	0.5 ft	645199-005
SS06	S	12-04-19 14:25	0.5 ft	645199-006
SS07	S	12-04-19 14:30	0.5 ft	645199-007
SS08	S	12-04-19 14:35	0.5 ft	645199-008
SS09	S	12-04-19 14:40	0.5 ft	645199-009

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 15 TWR PLU C1

Project ID: *012919290*
Work Order Number(s): *645199*

Report Date: *10-DEC-19*
Date Received: *12/05/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3109741 BTEX by EPA 8021B

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

Certificate of Analysis Summary 645199

LT Environmental, Inc., Arvada, CO

Project Name: PLU 15 TWR PLU C1

Project Id: 012919290
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Thu Dec-05-19 08:20 am
Report Date: 10-DEC-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	645199-001		645199-002		645199-003		645199-004		645199-005		645199-006	
	Field Id:	SS01		SS02		SS03		SS04		SS05		SS06	
	Depth:	0.5- ft		0.5- ft		0.5- ft		0.5- ft		0.5- ft		0.5- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-04-19 13:40		Dec-04-19 13:45		Dec-04-19 13:50		Dec-04-19 13:55		Dec-04-19 14:20		Dec-04-19 14:25	
BTEX by EPA 8021B SUB: T104704400-19-19	***Extracted:***	Dec-06-19 13:00		Dec-06-19 13:00		Dec-06-19 13:00		Dec-06-19 13:00		Dec-06-19 13:00		Dec-06-19 13:00	
	Analyzed:	Dec-07-19 00:08		Dec-07-19 00:28		Dec-07-19 00:48		Dec-07-19 01:08		Dec-07-19 01:28		Dec-07-19 01:48	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00199	0.00199
Toluene		<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00199	0.00199
Ethylbenzene		<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00199	0.00199
m,p-Xylenes		<0.00397	0.00397	<0.00400	0.00400	<0.00398	0.00398	<0.00397	0.00397	<0.00398	0.00398	<0.00398	0.00398
o-Xylene		<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00199	0.00199
Total Xylenes		<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00199	0.00199
Total BTEX		<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00199	0.00199
Chloride by EPA 300 SUB: T104704400-19-19	***Extracted:***	Dec-06-19 15:50		Dec-06-19 15:50		Dec-06-19 15:50		Dec-06-19 15:50		Dec-06-19 15:50		Dec-06-19 15:50	
	Analyzed:	Dec-06-19 21:06		Dec-06-19 21:28		Dec-06-19 21:35		Dec-06-19 21:42		Dec-06-19 21:50		Dec-06-19 22:11	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		47.8	4.97	5.79	5.03	2920	25.2	2250	25.2	2960	25.1	5540	50.2
TPH by SW8015 Mod SUB: T104704400-19-19	***Extracted:***	Dec-06-19 16:00		Dec-06-19 16:00		Dec-06-19 16:00		Dec-06-19 16:00		Dec-06-19 16:00		Dec-06-19 16:00	
	Analyzed:	Dec-07-19 02:05		Dec-07-19 03:03		Dec-07-19 03:22		Dec-07-19 03:41		Dec-07-19 04:00		Dec-07-19 04:20	
	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	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.8	49.8
Diesel Range Organics (DRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.8	49.8
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.8	49.8
Total GRO-DRO		<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.8	49.8
Total TPH		<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.8	49.8

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 645199

LT Environmental, Inc., Arvada, CO

Project Name: PLU 15 TWR PLU C1

Project Id: 012919290
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Thu Dec-05-19 08:20 am
Report Date: 10-DEC-19
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	645199-007		645199-008		645199-009					
	Field Id:	SS07		SS08		SS09					
	Depth:	0.5- ft		0.5- ft		0.5- ft					
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	Dec-04-19 14:30		Dec-04-19 14:35		Dec-04-19 14:40					
BTEX by EPA 8021B SUB: T104704400-19-19	***Extracted:***	Dec-06-19 13:00		Dec-06-19 13:00		Dec-06-19 13:00					
	Analyzed:	Dec-07-19 03:07		Dec-07-19 03:27		Dec-07-19 03:47					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200				
Toluene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200				
Ethylbenzene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200				
m,p-Xylenes		<0.00402	0.00402	<0.00398	0.00398	<0.00400	0.00400				
o-Xylene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200				
Total Xylenes		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200				
Total BTEX		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200				
Chloride by EPA 300 SUB: T104704400-19-19	***Extracted:***	Dec-06-19 15:50		Dec-06-19 15:50		Dec-06-19 15:50					
	Analyzed:	Dec-06-19 22:19		Dec-06-19 22:26		Dec-06-19 22:33					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		3300	24.8	1780	25.0	2780	25.0				
TPH by SW8015 Mod SUB: T104704400-19-19	***Extracted:***	Dec-06-19 16:00		Dec-06-19 16:00		Dec-06-19 16:00					
	Analyzed:	Dec-07-19 04:39		Dec-07-19 04:59		Dec-07-19 05:18					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<49.9	49.9	<50.0	50.0	<49.9	49.9				
Diesel Range Organics (DRO)		<49.9	49.9	<50.0	50.0	<49.9	49.9				
Motor Oil Range Hydrocarbons (MRO)		<49.9	49.9	<50.0	50.0	<49.9	49.9				
Total GRO-DRO		<49.9	49.9	<50.0	50.0	<49.9	49.9				
Total TPH		<49.9	49.9	<50.0	50.0	<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 645199

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-001	Date Collected:	12.04.19 13.40	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	12.06.19 15.50	Basis:	Wet Weight
Seq Number:	3109712			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**47.8**	4.97	mg/kg	12.06.19 21.06		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	12.06.19 16.00	Basis:	Wet Weight
Seq Number:	3109756			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	12.07.19 02.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.07.19 02.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.07.19 02.05	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	12.07.19 02.05	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.07.19 02.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	12.07.19 02.05	
o-Terphenyl	84-15-1	120	%	70-135	12.07.19 02.05	

Certificate of Analytical Results 645199

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-001	Date Collected:	12.04.19 13.40	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	12.06.19 13.00	Basis:	Wet Weight
Seq Number:	3109741			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.07.19 00.08	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.07.19 00.08	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.07.19 00.08	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	12.07.19 00.08	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.07.19 00.08	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.07.19 00.08	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.07.19 00.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	12.07.19 00.08	
4-Bromofluorobenzene	460-00-4	97	%	70-130	12.07.19 00.08	

Certificate of Analytical Results 645199

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-002	Date Collected:	12.04.19 13.45	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	12.06.19 15.50	Basis:	Wet Weight
Seq Number:	3109712			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5.79**	5.03	mg/kg	12.06.19 21.28		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	12.06.19 16.00	Basis:	Wet Weight
Seq Number:	3109756			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	12.07.19 03.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.07.19 03.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.07.19 03.03	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	12.07.19 03.03	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.07.19 03.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	12.07.19 03.03	
o-Terphenyl	84-15-1	102	%	70-135	12.07.19 03.03	

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LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-002	Date Collected:	12.04.19 13.45	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	12.06.19 13.00	Basis:	Wet Weight
Seq Number:	3109741			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.07.19 00.28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.07.19 00.28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.07.19 00.28	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.07.19 00.28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.07.19 00.28	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.07.19 00.28	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.07.19 00.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.07.19 00.28	
1,4-Difluorobenzene	540-36-3	99	%	70-130	12.07.19 00.28	

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LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-003	Date Collected:	12.04.19 13.50	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	12.06.19 15.50	Basis:	Wet Weight
Seq Number:	3109712			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2920**	25.2	mg/kg	12.06.19 21.35		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	12.06.19 16.00	Basis:	Wet Weight
Seq Number:	3109756			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	12.07.19 03.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.07.19 03.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.07.19 03.22	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	12.07.19 03.22	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.07.19 03.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	12.07.19 03.22	
o-Terphenyl	84-15-1	104	%	70-135	12.07.19 03.22	

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LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-003	Date Collected:	12.04.19 13.50	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	12.06.19 13.00	Basis:	Wet Weight
Seq Number:	3109741			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.07.19 00.48	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.07.19 00.48	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.07.19 00.48	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.07.19 00.48	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.07.19 00.48	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.07.19 00.48	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.07.19 00.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	101	%	70-130	12.07.19 00.48	
1,4-Difluorobenzene	540-36-3	98	%	70-130	12.07.19 00.48	

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LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-004	Date Collected:	12.04.19 13.55	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	12.06.19 15.50	Basis:	Wet Weight
Seq Number:	3109712			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2250**	25.2	mg/kg	12.06.19 21.42		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	12.06.19 16.00	Basis:	Wet Weight
Seq Number:	3109756			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	12.07.19 03.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.07.19 03.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.07.19 03.41	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	12.07.19 03.41	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.07.19 03.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	12.07.19 03.41	
o-Terphenyl	84-15-1	109	%	70-135	12.07.19 03.41	

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LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-004	Date Collected:	12.04.19 13.55	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	12.06.19 13.00	Basis:	Wet Weight
Seq Number:	3109741			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.07.19 01.08	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.07.19 01.08	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.07.19 01.08	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	12.07.19 01.08	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.07.19 01.08	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.07.19 01.08	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.07.19 01.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	97	%	70-130	12.07.19 01.08	
4-Bromofluorobenzene	460-00-4	96	%	70-130	12.07.19 01.08	

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LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-005	Date Collected:	12.04.19 14.20	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	12.06.19 15.50	Basis:	Wet Weight
Seq Number:	3109712			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2960**	25.1	mg/kg	12.06.19 21.50		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	12.06.19 16.00	Basis:	Wet Weight
Seq Number:	3109756			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	12.07.19 04.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.07.19 04.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.07.19 04.00	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	12.07.19 04.00	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.07.19 04.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	12.07.19 04.00	
o-Terphenyl	84-15-1	112	%	70-135	12.07.19 04.00	

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LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-005	Date Collected:	12.04.19 14.20	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	12.06.19 13.00	Basis:	Wet Weight
Seq Number:	3109741			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.07.19 01.28	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.07.19 01.28	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.07.19 01.28	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.07.19 01.28	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.07.19 01.28	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.07.19 01.28	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.07.19 01.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	12.07.19 01.28	
4-Bromofluorobenzene	460-00-4	104	%	70-130	12.07.19 01.28	

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LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS06**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-006	Date Collected:	12.04.19 14.25	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	12.06.19 15.50	Basis:	Wet Weight
Seq Number:	3109712			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5540**	50.2	mg/kg	12.06.19 22.11		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	12.06.19 16.00	Basis:	Wet Weight
Seq Number:	3109756			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	12.07.19 04.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.07.19 04.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.07.19 04.20	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	12.07.19 04.20	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	12.07.19 04.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	12.07.19 04.20	
o-Terphenyl	84-15-1	109	%	70-135	12.07.19 04.20	

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LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS06**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-006	Date Collected:	12.04.19 14.25	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	12.06.19 13.00	Basis:	Wet Weight
Seq Number:	3109741			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.07.19 01.48	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.07.19 01.48	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.07.19 01.48	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.07.19 01.48	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.07.19 01.48	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.07.19 01.48	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.07.19 01.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	70-130	12.07.19 01.48	
1,4-Difluorobenzene	540-36-3	101	%	70-130	12.07.19 01.48	

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LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS07**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-007	Date Collected:	12.04.19 14.30	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	12.06.19 15.50	Basis:	Wet Weight
Seq Number:	3109712			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3300**	24.8	mg/kg	12.06.19 22.19		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	12.06.19 16.00	Basis:	Wet Weight
Seq Number:	3109756			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	12.07.19 04.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.07.19 04.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.07.19 04.39	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	12.07.19 04.39	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.07.19 04.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	12.07.19 04.39	
o-Terphenyl	84-15-1	117	%	70-135	12.07.19 04.39	

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LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS07**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-007	Date Collected:	12.04.19 14.30	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	12.06.19 13.00	Basis:	Wet Weight
Seq Number:	3109741			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.07.19 03.07	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.07.19 03.07	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.07.19 03.07	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.07.19 03.07	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.07.19 03.07	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.07.19 03.07	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.07.19 03.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96	%	70-130	12.07.19 03.07	
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.07.19 03.07	

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LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS08**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-008	Date Collected:	12.04.19 14.35	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	12.06.19 15.50	Basis:	Wet Weight
Seq Number:	3109712			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1780**	25.0	mg/kg	12.06.19 22.26		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	12.06.19 16.00	Basis:	Wet Weight
Seq Number:	3109756			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	12.07.19 04.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.07.19 04.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.07.19 04.59	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	12.07.19 04.59	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.07.19 04.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	12.07.19 04.59	
o-Terphenyl	84-15-1	102	%	70-135	12.07.19 04.59	

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LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS08**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-008	Date Collected:	12.04.19 14.35	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	12.06.19 13.00	Basis:	Wet Weight
Seq Number:	3109741			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.07.19 03.27	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.07.19 03.27	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.07.19 03.27	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.07.19 03.27	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.07.19 03.27	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.07.19 03.27	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.07.19 03.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	12.07.19 03.27	
4-Bromofluorobenzene	460-00-4	98	%	70-130	12.07.19 03.27	

Certificate of Analytical Results 645199

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS09**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-009	Date Collected:	12.04.19 14.40	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	12.06.19 15.50	Basis:	Wet Weight
Seq Number:	3109712			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2780**	25.0	mg/kg	12.06.19 22.33		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	12.06.19 16.00	Basis:	Wet Weight
Seq Number:	3109756			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	12.07.19 05.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.07.19 05.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.07.19 05.18	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	12.07.19 05.18	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.07.19 05.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	12.07.19 05.18	
o-Terphenyl	84-15-1	102	%	70-135	12.07.19 05.18	

Certificate of Analytical Results 645199

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1

Sample Id:	**SS09**	Matrix:	Soil	Date Received:	12.05.19 08.20
Lab Sample Id:	645199-009	Date Collected:	12.04.19 14.40	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	12.06.19 13.00	Basis:	Wet Weight
Seq Number:	3109741			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.07.19 03.47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.07.19 03.47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.07.19 03.47	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.07.19 03.47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.07.19 03.47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.07.19 03.47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.07.19 03.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.07.19 03.47	
1,4-Difluorobenzene	540-36-3	99	%	70-130	12.07.19 03.47	

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 645199

LT Environmental, Inc.

PLU 15 TWR PLU C1

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109712 — Matrix: Solid — Date Prep: 12.06.19
MB Sample Id: 7691908-1-BLK — LCS Sample Id: 7691908-1-BKS — LCSD Sample Id: 7691908-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	253	101	253	101	90-110	0	20	mg/kg	12.06.19 20:51	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109712 — Matrix: Soil — Date Prep: 12.06.19
Parent Sample Id: 645199-001 — MS Sample Id: 645199-001 S — MSD Sample Id: 645199-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	47.8	249	303	102	304	103	90-110	0	20	mg/kg	12.06.19 21:13	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3109712 — Matrix: Soil — Date Prep: 12.06.19
Parent Sample Id: 645404-002 — MS Sample Id: 645404-002 S — MSD Sample Id: 645404-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	11.8	253	271	102	271	102	90-110	0	20	mg/kg	12.06.19 22:55	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3109756 — Matrix: Solid — Date Prep: 12.06.19
MB Sample Id: 7691874-1-BLK — LCS Sample Id: 7691874-1-BKS — LCSD Sample Id: 7691874-1-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	1150	115	1170	117	70-135	2	20	mg/kg	12.07.19 01:26	
Diesel Range Organics (DRO)	<15.0	1000	1020	102	1120	112	70-135	9	20	mg/kg	12.07.19 01:26	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		127		129		70-135	%	12.07.19 01:26
o-Terphenyl	121		113		119		70-135	%	12.07.19 01:26

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3109756 — Matrix: Solid — Date Prep: 12.06.19
MB Sample Id: 7691874-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.07.19 01:07	

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 645199

LT Environmental, Inc.

PLU 15 TWR PLU C1

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3109756 Matrix: Soil Date Prep: 12.06.19
Parent Sample Id: 645199-001 MS Sample Id: 645199-001 S MSD Sample Id: 645199-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	1130	113	1120	112	70-135	1	20	mg/kg	12.07.19 02:24	
Diesel Range Organics (DRO)	<15.0	997	1050	105	1030	103	70-135	2	20	mg/kg	12.07.19 02:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		127		70-135	%	12.07.19 02:24
o-Terphenyl	110		105		70-135	%	12.07.19 02:24

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3109741 Matrix: Solid Date Prep: 12.06.19
MB Sample Id: 7691847-1-BLK LCS Sample Id: 7691847-1-BKS LCSD Sample Id: 7691847-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0993	99	0.101	101	70-130	2	35	mg/kg	12.06.19 20:47	
Toluene	<0.000456	0.100	0.0944	94	0.0967	97	70-130	2	35	mg/kg	12.06.19 20:47	
Ethylbenzene	<0.000565	0.100	0.0908	91	0.0931	93	70-130	3	35	mg/kg	12.06.19 20:47	
m,p-Xylenes	<0.00101	0.200	0.182	91	0.187	94	70-130	3	35	mg/kg	12.06.19 20:47	
o-Xylene	0.000380	0.100	0.0910	91	0.0945	95	70-130	4	35	mg/kg	12.06.19 20:47	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		90		99		70-130	%	12.06.19 20:47
4-Bromofluorobenzene	95		100		109		70-130	%	12.06.19 20:47

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3109741 Matrix: Soil Date Prep: 12.06.19
Parent Sample Id: 645195-001 MS Sample Id: 645195-001 S MSD Sample Id: 645195-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000455	0.0998	0.0770	77	0.0715	70	70-130	7	35	mg/kg	12.06.19 21:27	
Toluene	0.000832	0.0998	0.0632	62	0.0602	59	70-130	5	35	mg/kg	12.06.19 21:27	X
Ethylbenzene	<0.000564	0.0998	0.0521	52	0.0499	49	70-130	4	35	mg/kg	12.06.19 21:27	X
m,p-Xylenes	<0.00101	0.200	0.101	51	0.0973	48	70-130	4	35	mg/kg	12.06.19 21:27	X
o-Xylene	<0.000344	0.0998	0.0493	49	0.0473	47	70-130	4	35	mg/kg	12.06.19 21:27	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		100		70-130	%	12.06.19 21:27
4-Bromofluorobenzene	106		110		70-130	%	12.06.19 21:27

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

Chain of Custody

Work Order No: 645199

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 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:	PLU 15 TWR PLU C1	Turn Around	
Project Number:	012919290	Routine	X
P.O. Number:	Eddy County	Rush:	
Sampler's Name:	Elizabeth Naka	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	1.7	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:	9	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
SS01	S	12/4/19	1340	0.5'	1	X	X	X
SS02			1345					
SS03			1350					
SS04			1355					
SS05			1428					
SS06			1425					
SS07			1430					
SS08			1435					
SS09			1440					

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

Elizabeth Naka

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
Elizabeth Naka		12/5/19 0820	2		
			4		
			6		

Revised Date 051418 Rev. 2018.1

Analytical Report 650041

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU 15 TWR PLU C1 Frac Pond

012919290

24-JAN-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

24-JAN-20

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

Reference: XENCO Report No(s): **650041**
PLU 15 TWR PLU C1 Frac Pond
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) 650041. 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. 650041 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 650041

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	01-22-20 09:30	1 ft	650041-001
PH01A	S	01-22-20 09:50	4 ft	650041-002
PH02	S	01-22-20 10:00	1 ft	650041-003
PH02A	S	01-22-20 10:05	2 ft	650041-004
PH03	S	01-22-20 10:10	1 ft	650041-005
PH03A	S	01-22-20 10:25	4 ft	650041-006
PH04	S	01-22-20 10:30	1 ft	650041-007
PH04A	S	01-22-20 10:45	4 ft	650041-008
PH05	S	01-22-20 10:50	1 ft	650041-009
PH05A	S	01-22-20 11:05	4 ft	650041-010

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 15 TWR PLU C1 Frac Pond

Project ID: *012919290*
Work Order Number(s): *650041*

Report Date: *24-JAN-20*
Date Received: *01/23/2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 650041

LT Environmental, Inc., Arvada, CO

Project Name: PLU 15 TWR PLU C1 Frac Pond

Project Id: 012919290
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Thu Jan-23-20 11:45 am
Report Date: 24-JAN-20
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	650041-001		650041-002		650041-003		650041-004		650041-005		650041-006	
	Field Id:	PH01		PH01A		PH02		PH02A		PH03		PH03A	
	Depth:	1- ft		4- ft		1- ft		2- ft		1- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-22-20 09:30		Jan-22-20 09:50		Jan-22-20 10:00		Jan-22-20 10:05		Jan-22-20 10:10		Jan-22-20 10:25	
Chloride by EPA 300	***Extracted:***	Jan-23-20 13:00		Jan-23-20 13:00		Jan-23-20 13:00		Jan-23-20 13:00		Jan-23-20 13:00		Jan-23-20 13:00	
	Analyzed:	Jan-23-20 17:42		Jan-23-20 17:47		Jan-23-20 17:52		Jan-23-20 17:57		Jan-23-20 18:13		Jan-23-20 18:18	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<9.92	9.92	<9.98	9.98	<10.1	10.1	<10.0	10.0	2320	50.0	421	10.0

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

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 650041

LT Environmental, Inc., Arvada, CO

Project Name: PLU 15 TWR PLU C1 Frac Pond

Project Id: 012919290
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Thu Jan-23-20 11:45 am
Report Date: 24-JAN-20
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	650041-007		650041-008		650041-009		650041-010					
	Field Id:	PH04		PH04A		PH05		PH05A					
	Depth:	1- ft		4- ft		1- ft		4- ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Jan-22-20 10:30		Jan-22-20 10:45		Jan-22-20 10:50		Jan-22-20 11:05					
Chloride by EPA 300	***Extracted:***	Jan-23-20 13:00		Jan-23-20 13:00		Jan-23-20 13:00		Jan-23-20 13:00					
	Analyzed:	Jan-23-20 18:39		Jan-23-20 18:45		Jan-23-20 18:50		Jan-23-20 18:55					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		2130	49.9	308	49.7	644	10.1	231	50.4				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 650041

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**PH01**	Matrix:	Soil	Date Received:	01.23.20 11.45
Lab Sample Id:	650041-001	Date Collected:	01.22.20 09.30	Sample Depth:	1 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.23.20 13.00	Basis:	Wet Weight
Seq Number:	3114261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.92	9.92	mg/kg	01.23.20 17.42	U	1

Certificate of Analytical Results 650041

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	01.23.20 11.45
Lab Sample Id:	650041-002	Date Collected:	01.22.20 09.50	Sample Depth:	4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.23.20 13.00	Basis:	Wet Weight
Seq Number:	3114261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	01.23.20 17.47	U	1

Certificate of Analytical Results 650041

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	01.23.20 11.45
Lab Sample Id:	650041-003	Date Collected:	01.22.20 10.00	Sample Depth:	1 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.23.20 13.00	Basis:	Wet Weight
Seq Number:	3114261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.1	10.1	mg/kg	01.23.20 17.52	U	1

Certificate of Analytical Results 650041

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	01.23.20 11.45
Lab Sample Id:	650041-004	Date Collected:	01.22.20 10.05	Sample Depth:	2 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.23.20 13.00	Basis:	Wet Weight
Seq Number:	3114261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	01.23.20 17.57	U	1

Certificate of Analytical Results 650041

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	01.23.20 11.45
Lab Sample Id:	650041-005	Date Collected:	01.22.20 10.10	Sample Depth:	1 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.23.20 13.00	Basis:	Wet Weight
Seq Number:	3114261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2320**	50.0	mg/kg	01.23.20 18.13		5

Certificate of Analytical Results 650041

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	01.23.20 11.45
Lab Sample Id:	650041-006	Date Collected:	01.22.20 10.25	Sample Depth:	4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.23.20 13.00	Basis:	Wet Weight
Seq Number:	3114261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**421**	10.0	mg/kg	01.23.20 18.18		1

Certificate of Analytical Results 650041

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**PH04**	Matrix:	Soil	Date Received:	01.23.20 11.45
Lab Sample Id:	650041-007	Date Collected:	01.22.20 10.30	Sample Depth:	1 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.23.20 13.00	Basis:	Wet Weight
Seq Number:	3114261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2130**	49.9	mg/kg	01.23.20 18.39		5

Certificate of Analytical Results 650041

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**PH04A**	Matrix:	Soil	Date Received:	01.23.20 11.45
Lab Sample Id:	650041-008	Date Collected:	01.22.20 10.45	Sample Depth:	4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.23.20 13.00	Basis:	Wet Weight
Seq Number:	3114261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**308**	49.7	mg/kg	01.23.20 18.45		5

Certificate of Analytical Results 650041

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**PH05**	Matrix:	Soil	Date Received:	01.23.20 11.45
Lab Sample Id:	650041-009	Date Collected:	01.22.20 10.50	Sample Depth:	1 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.23.20 13.00	Basis:	Wet Weight
Seq Number:	3114261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**644**	10.1	mg/kg	01.23.20 18.50		1

Certificate of Analytical Results 650041

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**PH05A**	Matrix:	Soil	Date Received:	01.23.20 11.45
Lab Sample Id:	650041-010	Date Collected:	01.22.20 11.05	Sample Depth:	4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.23.20 13.00	Basis:	Wet Weight
Seq Number:	3114261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**231**	50.4	mg/kg	01.23.20 18.55		5

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 650041

LT Environmental, Inc.

PLU 15 TWR PLU C1 Frac Pond

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3114261 Matrix: Solid Date Prep: 01.23.20
MB Sample Id: 7695074-1-BLK LCS Sample Id: 7695074-1-BKS LCSD Sample Id: 7695074-1-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	247	99	248	99	90-110	0	20	mg/kg	01.23.20 16:33	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3114261 Matrix: Soil Date Prep: 01.23.20
Parent Sample Id: 650035-018 MS Sample Id: 650035-018 S MSD Sample Id: 650035-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	366	201	569	101	571	101	90-110	0	20	mg/kg	01.23.20 16:50	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3114261 Matrix: Soil Date Prep: 01.23.20
Parent Sample Id: 650041-004 MS Sample Id: 650041-004 S MSD Sample Id: 650041-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.75	202	210	101	209	101	90-110	0	20	mg/kg	01.23.20 18:03	

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: 450041

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 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:	PLU 157WR PLU C1 Frac Pond	Turn Around	
Project Number:	612919290	Routine ☐	
P.O. Number:	Eddy County	Rush: 24hour	
Sampler's Name:	Elizabeth Naka	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	1.0	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:	10

ANALYSIS REQUEST

Work Order Notes

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	Sample Comments
PH01	S	1/22/20	0930	1'	1			X	discrete
PH01A			0950	4'					
PH02			1000	1'					
PH02A			1005	2'					
PH03			1010	1'					
PH03A			1025	4'					
PH04			1030	1'					
PH04A			1045	4'					
PH05			1050	1'					
PH05A	↓	↓	1105	4'	↓			↓	↓

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	Elizabeth Naka	Elizabeth Naka	1/23/20 11:00am	2 Elizabeth Naka		1/23/20 1:45
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01.23.2020 11.45.00 AM

Work Order #: 650041

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

Temperature Measuring device used : T-NM-007

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 01.23.2020

Checklist reviewed by: Jessica Kramer Date: 01.24.2020

Jessica Kramer

Analytical Report 650197

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU 15 TWR PLUC1 Frac Pond

012919290

27-JAN-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

27-JAN-20

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

Reference: XENCO Report No(s): **650197**
PLU 15 TWR PLUC1 Frac Pond
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) 650197. 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. 650197 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 650197

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLUC1 Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	01-23-20 08:30	4 ft	650197-001
FS02	S	01-23-20 10:35	4 ft	650197-002
FS03	S	01-23-20 11:10	4 ft	650197-003
FS04	S	01-23-20 12:05	4 ft	650197-004
FS05	S	01-23-20 12:40	4 ft	650197-005
FS06	S	01-23-20 13:05	4 ft	650197-006
FS07	S	01-23-20 13:10	4 ft	650197-007
FS08	S	01-23-20 14:30	4 ft	650197-008
FS09	S	01-23-20 14:55	4 ft	650197-009
FS10	S	01-23-20 15:20	3.5 ft	650197-010
SW01	S	01-23-20 08:35	0 - 4 ft	650197-011
SW02	S	01-23-20 09:10	0 - 4 ft	650197-012
SW03	S	01-23-20 10:40	0 - 4 ft	650197-013
SW04	S	01-23-20 11:30	0 - 4 ft	650197-014
SW05	S	01-23-20 13:30	0 - 4 ft	650197-015
SW06	S	01-23-20 14:05	0 - 4 ft	650197-016

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 15 TWR PLUC1 Frac Pond

Project ID: *012919290*
Work Order Number(s): *650197*

Report Date: *27-JAN-20*
Date Received: *01/24/2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 650197

LT Environmental, Inc., Arvada, CO

Project Name: PLU 15 TWR PLUC1 Frac Pond

Project Id: 012919290
Contact: Dan Moir
Project Location:

Date Received in Lab: Fri Jan-24-20 09:40 am
Report Date: 27-JAN-20
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	650197-001		650197-002		650197-003		650197-004		650197-005		650197-006	
	Field Id:	FS01		FS02		FS03		FS04		FS05		FS06	
	Depth:	4- ft		4- ft		4- ft		4- ft		4- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-23-20 08:30		Jan-23-20 10:35		Jan-23-20 11:10		Jan-23-20 12:05		Jan-23-20 12:40		Jan-23-20 13:05	
Chloride by EPA 300	***Extracted:***	Jan-24-20 14:01		Jan-24-20 14:01		Jan-24-20 14:01		Jan-24-20 14:01		Jan-24-20 14:01		Jan-24-20 14:01	
	Analyzed:	Jan-24-20 19:03		Jan-25-20 08:03		Jan-25-20 08:08		Jan-25-20 08:13		Jan-25-20 08:21		Jan-25-20 08:26	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		629	9.94	258	9.98	116	10.1	515	9.88	455	9.98	544	9.88

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 650197

LT Environmental, Inc., Arvada, CO

Project Name: PLU 15 TWR PLUC1 Frac Pond

Project Id: 012919290
Contact: Dan Moir
Project Location:

Date Received in Lab: Fri Jan-24-20 09:40 am
Report Date: 27-JAN-20
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	650197-007		650197-008		650197-009		650197-010		650197-011		650197-012	
	Field Id:	FS07		FS08		FS09		FS10		SW01		SW02	
	Depth:	4- ft		4- ft		4- ft		3.5- ft		0-4 ft		0-4 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-23-20 13:10		Jan-23-20 14:30		Jan-23-20 14:55		Jan-23-20 15:20		Jan-23-20 08:35		Jan-23-20 09:10	
Chloride by EPA 300	***Extracted:***	Jan-24-20 14:01		Jan-24-20 14:01		Jan-24-20 14:30		Jan-24-20 14:30		Jan-24-20 14:30		Jan-24-20 14:30	
	Analyzed:	Jan-25-20 08:31		Jan-25-20 08:36		Jan-25-20 09:07		Jan-25-20 09:22		Jan-25-20 09:27		Jan-25-20 09:32	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		629	9.98	1170	10.0	672	9.98	385	10.1	91.0	10.0	136	9.94

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 650197

LT Environmental, Inc., Arvada, CO

Project Name: PLU 15 TWR PLUC1 Frac Pond

Project Id: 012919290
Contact: Dan Moir
Project Location:

Date Received in Lab: Fri Jan-24-20 09:40 am
Report Date: 27-JAN-20
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	650197-013		650197-014		650197-015		650197-016			
	Field Id:	SW03		SW04		SW05		SW06			
	Depth:	0-4 ft		0-4 ft		0-4 ft		0-4 ft			
	Matrix:	SOIL		SOIL		SOIL		SOIL			
	Sampled:	Jan-23-20 10:40		Jan-23-20 11:30		Jan-23-20 13:30		Jan-23-20 14:05			
Chloride by EPA 300	***Extracted:***	Jan-24-20 14:30		Jan-24-20 14:30		Jan-24-20 14:30		Jan-24-20 14:30			
	Analyzed:	Jan-25-20 09:37		Jan-25-20 09:55		Jan-25-20 09:59		Jan-25-20 10:05			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		409	9.90	273	9.86	330	9.98	277	9.96		

Jessica Kramer
Project Assistant

Certificate of Analytical Results 650197

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLUC1 Frac Pond

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	01.24.20 09.40
Lab Sample Id:	650197-001	Date Collected:	01.23.20 08.30	Sample Depth:	4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.24.20 14.01	Basis:	Wet Weight
Seq Number:	3114409				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**629**	9.94	mg/kg	01.24.20 19.03		1

Certificate of Analytical Results 650197

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLUC1 Frac Pond

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	01.24.20 09.40
Lab Sample Id:	650197-002	Date Collected:	01.23.20 10.35	Sample Depth:	4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.24.20 14.01	Basis:	Wet Weight
Seq Number:	3114409				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**258**	9.98	mg/kg	01.25.20 08.03		1

Certificate of Analytical Results 650197

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLUC1 Frac Pond

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	01.24.20 09.40
Lab Sample Id:	650197-003	Date Collected:	01.23.20 11.10	Sample Depth:	4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.24.20 14.01	Basis:	Wet Weight
Seq Number:	3114409				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**116**	10.1	mg/kg	01.25.20 08.08		1

Certificate of Analytical Results 650197

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLUC1 Frac Pond

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	01.24.20 09.40
Lab Sample Id:	650197-004	Date Collected:	01.23.20 12.05	Sample Depth:	4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.24.20 14.01	Basis:	Wet Weight
Seq Number:	3114409				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**515**	9.88	mg/kg	01.25.20 08.13		1

Certificate of Analytical Results 650197

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLUC1 Frac Pond

Sample Id:	**FS05**	Matrix:	Soil	Date Received:	01.24.20 09.40
Lab Sample Id:	650197-005	Date Collected:	01.23.20 12.40	Sample Depth:	4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.24.20 14.01	Basis:	Wet Weight
Seq Number:	3114409				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**455**	9.98	mg/kg	01.25.20 08.21		1

Certificate of Analytical Results 650197

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLUC1 Frac Pond

Sample Id:	**FS06**	Matrix:	Soil	Date Received:	01.24.20 09.40
Lab Sample Id:	650197-006	Date Collected:	01.23.20 13.05	Sample Depth:	4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.24.20 14.01	Basis:	Wet Weight
Seq Number:	3114409				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**544**	9.88	mg/kg	01.25.20 08.26		1

Certificate of Analytical Results 650197

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLUC1 Frac Pond

Sample Id:	**FS07**	Matrix:	Soil	Date Received:	01.24.20 09.40
Lab Sample Id:	650197-007	Date Collected:	01.23.20 13.10	Sample Depth:	4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.24.20 14.01	Basis:	Wet Weight
Seq Number:	3114409				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**629**	9.98	mg/kg	01.25.20 08.31		1

Certificate of Analytical Results 650197

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLUC1 Frac Pond

Sample Id:	**FS08**	Matrix:	Soil	Date Received:	01.24.20 09.40
Lab Sample Id:	650197-008	Date Collected:	01.23.20 14.30	Sample Depth:	4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.24.20 14.01	Basis:	Wet Weight
Seq Number:	3114409				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1170**	10.0	mg/kg	01.25.20 08.36		1

Certificate of Analytical Results 650197

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLUC1 Frac Pond

Sample Id:	**FS09**	Matrix:	Soil	Date Received:	01.24.20 09.40
Lab Sample Id:	650197-009	Date Collected:	01.23.20 14.55	Sample Depth:	4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.24.20 14.30	Basis:	Wet Weight
Seq Number:	3114410				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**672**	9.98	mg/kg	01.25.20 09.07		1

Certificate of Analytical Results 650197

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLUC1 Frac Pond

Sample Id:	**FS10**	Matrix:	Soil	Date Received:	01.24.20 09.40
Lab Sample Id:	650197-010	Date Collected:	01.23.20 15.20	Sample Depth:	3.5 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.24.20 14.30	Basis:	Wet Weight
Seq Number:	3114410				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**385**	10.1	mg/kg	01.25.20 09.22		1

Certificate of Analytical Results 650197

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLUC1 Frac Pond

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	01.24.20 09.40
Lab Sample Id:	650197-011	Date Collected:	01.23.20 08.35	Sample Depth:	0 - 4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.24.20 14.30	Basis:	Wet Weight
Seq Number:	3114410				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**91.0**	10.0	mg/kg	01.25.20 09.27		1

Certificate of Analytical Results 650197

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLUC1 Frac Pond

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	01.24.20 09.40
Lab Sample Id:	650197-012	Date Collected:	01.23.20 09.10	Sample Depth:	0 - 4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.24.20 14.30	Basis:	Wet Weight
Seq Number:	3114410				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**136**	9.94	mg/kg	01.25.20 09.32		1

Certificate of Analytical Results 650197

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLUC1 Frac Pond

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	01.24.20 09.40
Lab Sample Id:	650197-013	Date Collected:	01.23.20 10.40	Sample Depth:	0 - 4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.24.20 14.30	Basis:	Wet Weight
Seq Number:	3114410				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**409**	9.90	mg/kg	01.25.20 09.37		1

Certificate of Analytical Results 650197

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLUC1 Frac Pond

Sample Id:	**SW04**	Matrix:	Soil	Date Received:	01.24.20 09.40
Lab Sample Id:	650197-014	Date Collected:	01.23.20 11.30	Sample Depth:	0 - 4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.24.20 14.30	Basis:	Wet Weight
Seq Number:	3114410				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**273**	9.86	mg/kg	01.25.20 09.55		1

Certificate of Analytical Results 650197

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLUC1 Frac Pond

Sample Id:	**SW05**	Matrix:	Soil	Date Received:	01.24.20 09.40
Lab Sample Id:	650197-015	Date Collected:	01.23.20 13.30	Sample Depth:	0 - 4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.24.20 14.30	Basis:	Wet Weight
Seq Number:	3114410				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**330**	9.98	mg/kg	01.25.20 09.59		1

Certificate of Analytical Results 650197

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLUC1 Frac Pond

Sample Id:	**SW06**	Matrix:	Soil	Date Received:	01.24.20 09.40
Lab Sample Id:	650197-016	Date Collected:	01.23.20 14.05	Sample Depth:	0 - 4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.24.20 14.30	Basis:	Wet Weight
Seq Number:	3114410				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**277**	9.96	mg/kg	01.25.20 10.05		1

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 650197

LT Environmental, Inc.

PLU 15 TWR PLUC1 Frac Pond

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3114409 Matrix: Solid Date Prep: 01.24.20
MB Sample Id: 7695157-1-BLK LCS Sample Id: 7695157-1-BKS LCSD Sample Id: 7695157-1-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	245	98	247	99	90-110	1	20	mg/kg	01.24.20 17:02	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3114410 Matrix: Solid Date Prep: 01.24.20
MB Sample Id: 7695159-1-BLK LCS Sample Id: 7695159-1-BKS LCSD Sample Id: 7695159-1-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	246	98	247	99	90-110	0	20	mg/kg	01.25.20 08:57	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3114409 Matrix: Soil Date Prep: 01.24.20
Parent Sample Id: 650045-016 MS Sample Id: 650045-016 S MSD Sample Id: 650045-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	286	200	491	103	501	106	90-110	2	20	mg/kg	01.24.20 18:45	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3114409 Matrix: Soil Date Prep: 01.24.20
Parent Sample Id: 650193-001 MS Sample Id: 650193-001 S MSD Sample Id: 650193-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	148	200	355	104	354	104	90-110	0	20	mg/kg	01.24.20 17:20	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3114410 Matrix: Soil Date Prep: 01.24.20
Parent Sample Id: 650197-009 MS Sample Id: 650197-009 S MSD Sample Id: 650197-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	672	199	881	105	886	108	90-110	1	20	mg/kg	01.25.20 09:12	

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

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

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

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

QC Summary 650197

LT Environmental, Inc.

PLU 15 TWR PLUC1 Frac Pond

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3114410 Matrix: Soil Date Prep: 01.24.20

Parent Sample Id: 650230-003 MS Sample Id: 650230-003 S MSD Sample Id: 650230-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2650	200	2780	65	2780	65	90-110	0	20	mg/kg	01.25.20 10:25	X

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

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

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

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

Chain of Custody

Work Order No: 650197

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)
www.xenco.com Page 1 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, 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 ☐ RRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	PLU 15 TWR PLUC1 Frac Pond	Turn Around	
Project Number:	012919290	Routine ☐	
P.O. Number:	Eddy County	Rush: 24 hour	
Sampler's Name:	Elizabeth Naka	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):	1.0	Thermometer ID		
Received Intact:	(Yes) No	THM007		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes (No) N/A	Total Containers:	16	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	Sample Comments
FS01	S	1/23/20	0830	4'	1			X	composite
FS02			1035	4'					
FS03			1110	4'					
FS04			1205	4'					
FS05			1240	4'					
FS06			1305	4'					
FS07			1310	4'					
FS08			1430	4'					
FS09			1455	4'					
FS10			1520	3.5'					

ANALYSIS REQUEST

Work Order Notes

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		01/24/20 09:40	2		
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Chain of Custody

Work Order No: 650197

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

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	
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 ☐ RRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	PLU 15 TWR PLUC1 Frac Pond	Turn Around	
Project Number:	012919290	Routine ☐	
P.O. Number:	Eddy County	Rush: 24hour	
Sampler's Name:	Elizabeth Naka	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)	Sample Comments
SW01	S	1/23/20	0835	0-4'	1			X	composite
SW02			0910						
SW03			1046						
SW04			1130						
SW05			1330						
SW06			1405						

ANALYSIS REQUEST

Work Order Notes

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

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Elizabeth Naka		01/24/20 09:40	2		
			4		
			6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01.24.2020 09.40.00 AM

Work Order #: 650197

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

Temperature Measuring device used : T NM 007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**No**
#5 Custody Seals intact on sample bottles?	**No**
#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: Martha Castro Date: 01.24.2020

Checklist reviewed by: Jessica Kramer Date: 01.27.2020

Jessica Kramer

Analytical Report 650333

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU 15 TWR PLU C1 Frac Pond

012919290

28-JAN-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

28-JAN-20

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

Reference: XENCO Report No(s): **650333**
PLU 15 TWR PLU C1 Frac Pond
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) 650333. 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. 650333 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 650333

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS11	S	01-24-20 09:10	2 ft	650333-001
FS12	S	01-24-20 10:25	2 ft	650333-002
FS13	S	01-24-20 10:45	1 - 2 ft	650333-003
FS14	S	01-24-20 12:20	1 ft	650333-004
FS15	S	01-24-20 14:30	2 ft	650333-005
FS16	S	01-24-20 15:50	2 ft	650333-006
FS17	S	01-24-20 15:55	2 ft	650333-007
SW08	S	01-24-20 09:15	0 - 3.5 ft	650333-008
SW09	S	01-24-20 10:00	0 - 4 ft	650333-009
SW10	S	01-24-20 12:50	0 - 2 ft	650333-010
SW11	S	01-24-20 13:50	0 - 1 ft	650333-011
SW12	S	01-24-20 14:50	0 - 2 ft	650333-012
SW13	S	01-24-20 15:30	0 - 2 ft	650333-013

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 15 TWR PLU C1 Frac Pond

Project ID: *012919290*
Work Order Number(s): *650333*

Report Date: *28-JAN-20*
Date Received: *01/27/2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 650333

LT Environmental, Inc., Arvada, CO

Project Name: PLU 15 TWR PLU C1 Frac Pond

Project Id: 012919290
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Mon Jan-27-20 09:30 am
Report Date: 28-JAN-20
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	650333-001		650333-002		650333-003		650333-004		650333-005		650333-006	
	Field Id:	FS11		FS12		FS13		FS14		FS15		FS16	
	Depth:	2- ft		2- ft		1-2 ft		1- ft		2- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-24-20 09:10		Jan-24-20 10:25		Jan-24-20 10:45		Jan-24-20 12:20		Jan-24-20 14:30		Jan-24-20 15:50	
Chloride by EPA 300	***Extracted:***	Jan-27-20 18:03		Jan-27-20 18:03		Jan-27-20 18:03		Jan-27-20 18:03		Jan-27-20 18:03		Jan-27-20 18:03	
	Analyzed:	Jan-27-20 23:53		Jan-28-20 00:02		Jan-28-20 00:11		Jan-28-20 00:20		Jan-28-20 00:29		Jan-28-20 00:55	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1140	10.0	153	9.90	190	9.92	<10.1	10.1	13.9	10.1	<9.92	9.92

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 650333

LT Environmental, Inc., Arvada, CO

Project Name: PLU 15 TWR PLU C1 Frac Pond

Project Id: 012919290
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Mon Jan-27-20 09:30 am
Report Date: 28-JAN-20
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	650333-007		650333-008		650333-009		650333-010		650333-011		650333-012	
	Field Id:	FS17		SW08		SW09		SW10		SW11		SW12	
	Depth:	2- ft		0-3.5 ft		0-4 ft		0-2 ft		0-1 ft		0-2 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-24-20 15:55		Jan-24-20 09:15		Jan-24-20 10:00		Jan-24-20 12:50		Jan-24-20 13:50		Jan-24-20 14:50	
Chloride by EPA 300	***Extracted:***	Jan-27-20 18:03		Jan-27-20 18:03		Jan-27-20 18:03		Jan-27-20 18:03		Jan-27-20 18:03		Jan-27-20 18:03	
	Analyzed:	Jan-28-20 01:04		Jan-28-20 01:12		Jan-28-20 01:39		Jan-28-20 01:48		Jan-28-20 01:56		Jan-28-20 02:05	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		597	9.98	963	9.94	<10.1	10.1	271	10.0	64.8	10.0	15.4	10.1

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 650333

LT Environmental, Inc., Arvada, CO

Project Name: PLU 15 TWR PLU C1 Frac Pond

Project Id: 012919290
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Mon Jan-27-20 09:30 am
Report Date: 28-JAN-20
Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	650333-013					
	Field Id:	SW13					
	Depth:	0-2 ft					
	Matrix:	SOIL					
	Sampled:	Jan-24-20 15:30					
Chloride by EPA 300	***Extracted:***	Jan-27-20 18:03					
	Analyzed:	Jan-28-20 02:14					
	Units/RL:	mg/kg	RL				
Chloride		466	10.0				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 650333

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**FS11**	Matrix:	Soil	Date Received:	01.27.20 09.30
Lab Sample Id:	650333-001	Date Collected:	01.24.20 09.10	Sample Depth:	2 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.27.20 18.03	Basis:	Wet Weight
Seq Number:	3114636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1140**	10.0	mg/kg	01.27.20 23.53		1

Certificate of Analytical Results 650333

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**FS12**	Matrix:	Soil	Date Received:	01.27.20 09.30
Lab Sample Id:	650333-002	Date Collected:	01.24.20 10.25	Sample Depth:	2 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.27.20 18.03	Basis:	Wet Weight
Seq Number:	3114636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**153**	9.90	mg/kg	01.28.20 00.02		1

Certificate of Analytical Results 650333

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**FS13**	Matrix:	Soil	Date Received:	01.27.20 09.30
Lab Sample Id:	650333-003	Date Collected:	01.24.20 10.45	Sample Depth:	1 - 2 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.27.20 18.03	Basis:	Wet Weight
Seq Number:	3114636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**190**	9.92	mg/kg	01.28.20 00.11		1

Certificate of Analytical Results 650333

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**FS14**	Matrix:	Soil	Date Received:	01.27.20 09.30
Lab Sample Id:	650333-004	Date Collected:	01.24.20 12.20	Sample Depth:	1 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.27.20 18.03	Basis:	Wet Weight
Seq Number:	3114636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.1	10.1	mg/kg	01.28.20 00.20	U	1

Certificate of Analytical Results 650333

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**FS15**	Matrix:	Soil	Date Received:	01.27.20 09.30
Lab Sample Id:	650333-005	Date Collected:	01.24.20 14.30	Sample Depth:	2 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.27.20 18.03	Basis:	Wet Weight
Seq Number:	3114636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**13.9**	10.1	mg/kg	01.28.20 00.29		1

Certificate of Analytical Results 650333

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**FS16**	Matrix:	Soil	Date Received:	01.27.20 09.30
Lab Sample Id:	650333-006	Date Collected:	01.24.20 15.50	Sample Depth:	2 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.27.20 18.03	Basis:	Wet Weight
Seq Number:	3114636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.92	9.92	mg/kg	01.28.20 00.55	U	1

Certificate of Analytical Results 650333

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**FS17**	Matrix:	Soil	Date Received:	01.27.20 09.30
Lab Sample Id:	650333-007	Date Collected:	01.24.20 15.55	Sample Depth:	2 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.27.20 18.03	Basis:	Wet Weight
Seq Number:	3114636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**597**	9.98	mg/kg	01.28.20 01.04		1

Certificate of Analytical Results 650333

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**SW08**	Matrix:	Soil	Date Received:	01.27.20 09.30
Lab Sample Id:	650333-008	Date Collected:	01.24.20 09.15	Sample Depth:	0 - 3.5 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.27.20 18.03	Basis:	Wet Weight
Seq Number:	3114636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**963**	9.94	mg/kg	01.28.20 01.12		1

Certificate of Analytical Results 650333

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**SW09**	Matrix:	Soil	Date Received:	01.27.20 09.30
Lab Sample Id:	650333-009	Date Collected:	01.24.20 10.00	Sample Depth:	0 - 4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.27.20 18.03	Basis:	Wet Weight
Seq Number:	3114636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.1	10.1	mg/kg	01.28.20 01.39	U	1

Certificate of Analytical Results 650333

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**SW10**	Matrix:	Soil	Date Received:	01.27.20 09.30
Lab Sample Id:	650333-010	Date Collected:	01.24.20 12.50	Sample Depth:	0 - 2 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.27.20 18.03	Basis:	Wet Weight
Seq Number:	3114636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**271**	10.0	mg/kg	01.28.20 01.48		1

Certificate of Analytical Results 650333

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**SW11**	Matrix:	Soil	Date Received:	01.27.20 09.30
Lab Sample Id:	650333-011	Date Collected:	01.24.20 13.50	Sample Depth:	0 - 1 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.27.20 18.03	Basis:	Wet Weight
Seq Number:	3114636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**64.8**	10.0	mg/kg	01.28.20 01.56		1

Certificate of Analytical Results 650333

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**SW12**	Matrix:	Soil	Date Received:	01.27.20 09.30
Lab Sample Id:	650333-012	Date Collected:	01.24.20 14.50	Sample Depth:	0 - 2 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.27.20 18.03	Basis:	Wet Weight
Seq Number:	3114636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**15.4**	10.1	mg/kg	01.28.20 02.05		1

Certificate of Analytical Results 650333

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**SW13**	Matrix:	Soil	Date Received:	01.27.20 09.30
Lab Sample Id:	650333-013	Date Collected:	01.24.20 15.30	Sample Depth:	0 - 2 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.27.20 18.03	Basis:	Wet Weight
Seq Number:	3114636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**466**	10.0	mg/kg	01.28.20 02.14		1

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 650333

LT Environmental, Inc.

PLU 15 TWR PLU C1 Frac Pond

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3114636 Matrix: Solid Date Prep: 01.27.20

MB Sample Id: 7695318-1-BLK LCS Sample Id: 7695318-1-BKS LCSD Sample Id: 7695318-1-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	266	106	269	108	90-110	1	20	mg/kg	01.27.20 22:28	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3114636 Matrix: Soil Date Prep: 01.27.20

Parent Sample Id: 650327-001 MS Sample Id: 650327-001 S MSD Sample Id: 650327-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.89	202	212	102	210	101	90-110	1	20	mg/kg	01.27.20 22:43	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3114636 Matrix: Soil Date Prep: 01.27.20

Parent Sample Id: 650333-005 MS Sample Id: 650333-005 S MSD Sample Id: 650333-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	13.9	202	223	104	223	104	90-110	0	20	mg/kg	01.28.20 00:37	

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

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

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

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

Chain of Custody

Work Order No: 650333

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)

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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 ☐ RRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	PLU 15 TWR PLU C1 Frac Pond	Turn Around	
Project Number:	612919290	Routine ☐	
P.O. Number:	Eddy County	Rush: 24 hr	
Sampler's Name:	Elizabeth Naka	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	0.8	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:	13	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	Sample Comments
FS11	S	1/24/20	0910	2'	1			X	composite
FS12			1025	2'					
FS13			1045	1'-2'					
FS14			1220	1'					
FS15			1430	2'					
FS16			1550	2'					
FS17			1555	2'					
SW08			0915	0'-3.5'					
SW09			1000	0'-4'					
SW10			1250	0'-2'					

ANALYSIS REQUEST

Work Order Notes

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

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Elizabeth Naka		1/27/20 9:00am	2		1/27/20 930
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

Chain of Custody

Work Order No: 6JO333

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)

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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 ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	PLU 15 TWR PLU C1 Frac Pond	Turn Around	
Project Number:	012919290	Routine	☐
P.O. Number:	Eddy County	Rush:	24hour
Sampler's Name:	Elizabeth Naka	Due Date:	

SAMPLE RECEIPT				
Temperature (°C):		Temp Blank:	Yes No	Wet Ice: Yes ~~No~~
Received Intact:	Yes No	Thermometer ID		
Cooler Custody Seals:	Yes No ~~N/A~~	Correction Factor:		
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
SW11	S	1/27/20	1350	0'-1'				X	composite
SW12	↓	↓	1450	0'-2'					↓
SW13	↓	↓	1530	0'-2'				↓	

Work Order Notes

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time		Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Elizabeth Naka		1/27/20 9:00am	2			1/27/20 930
3				4			
5				6			

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01.27.2020 09.30.00 AM

Work Order #: 650333

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 01.27.2020

Checklist reviewed by: Jessica Kramer Date: 01.28.2020

Jessica Kramer

Analytical Report 653373

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU 15 TWR PLU C1 Frac Pond

012919290

02.24.2020

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)

02.24.2020

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

Reference: XENCO Report No(s): **653373**
PLU 15 TWR PLU C1 Frac Pond
Project Address: Eddy

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 653373. 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. 653373 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,

John Builes
Project Manager

A Small Business and Minority Company

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

Analytical Report 653373

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU 15 TWR PLU C1 Frac Pond

012919290

18-MAR-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

18-MAR-20

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

Reference: XENCO Report No(s): **653373**
PLU 15 TWR PLU C1 Frac Pond
Project Address: Eddy

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 653373. 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. 653373 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 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 653373

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS11A	S	02-21-20 13:19	3 ft	653373-001
SW14	S	02-21-20 13:02	1 - 3 ft	653373-002

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 15 TWR PLU C1 Frac Pond

Project ID: *012919290*
Work Order Number(s): *653373*

Report Date: *18-MAR-20*
Date Received: *02/21/2020*

Sample receipt non conformances and comments:

V1.001 Revision (client phone) Corrected sample name from SW13 to SW14. JK 03/18/20

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 653373

LT Environmental, Inc., Arvada, CO

Project Name: PLU 15 TWR PLU C1 Frac Pond

Project Id: 012919290
Contact: Dan Moir
Project Location: Eddy

Date Received in Lab: Fri Feb-21-20 04:10 pm
Report Date: 18-MAR-20
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	653373-001		653373-002					
	Field Id:	FS11A		SW14					
	Depth:	3- ft		1-3 ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Feb-21-20 13:19		Feb-21-20 13:02					
Chloride by EPA 300	***Extracted:***	Feb-21-20 18:11		Feb-21-20 18:11					
	Analyzed:	Feb-22-20 00:18		Feb-22-20 00:24					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		177	9.96	144	9.94				

Jessica Kramer
Project Manager

Certificate of Analytical Results 653373

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**FS11A**	Matrix:	Soil	Date Received:	02.21.20 16.10
Lab Sample Id:	653373-001	Date Collected:	02.21.20 13.19	Sample Depth:	3 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.21.20 18.11	Basis:	Wet Weight
Seq Number:	3117384				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**177**	9.96	mg/kg	02.22.20 00.18		1

Certificate of Analytical Results 653373

LT Environmental, Inc., Arvada, CO

PLU 15 TWR PLU C1 Frac Pond

Sample Id:	**SW14**	Matrix:	Soil	Date Received:	02.21.20 16.10
Lab Sample Id:	653373-002	Date Collected:	02.21.20 13.02	Sample Depth:	1 - 3 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.21.20 18.11	Basis:	Wet Weight
Seq Number:	3117384				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**144**	9.94	mg/kg	02.22.20 00.24		1

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 653373

LT Environmental, Inc.

PLU 15 TWR PLU C1 Frac Pond

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3117384 Matrix: Solid Date Prep: 02.21.20
MB Sample Id: 7697232-1-BLK LCS Sample Id: 7697232-1-BKS LCSD Sample Id: 7697232-1-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	257	103	258	103	90-110	0	20	mg/kg	02.21.20 21:47	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3117384 Matrix: Soil Date Prep: 02.21.20
Parent Sample Id: 653326-003 MS Sample Id: 653326-003 S MSD Sample Id: 653326-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5370	201	5560	95	5560	95	90-110	0	20	mg/kg	02.21.20 23:24	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3117384 Matrix: Soil Date Prep: 02.21.20
Parent Sample Id: 653332-001 MS Sample Id: 653332-001 S MSD Sample Id: 653332-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	37.3	200	255	109	247	105	90-110	3	20	mg/kg	02.21.20 22:05	

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: 453373

www.xenco.com Page 1 of 1

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

Work Order Comments

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

Project Name:	PLU 15 TWR PLU C1 Frac Pond	Turn Around	
Project Number:	012919290	Routine	☐
P.O. Number:	Eddy	Rush:	24hr
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	~~Yes~~ No	Wet Ice:	(Yes) No	
Temperature (°C):	1.2	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:	2	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
FS11A	s	2/21/2020	~~11:00~~ 13:19	~~2~~ 3'	1			x
SW13	s	2/21/2020	~~11:03~~ 13:02	~~2~~ 1-3'	1			x

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

composite
composite

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			2/21/20 16:13	2		
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

1.001

ATTACHMENT 3: LITHOLOGIC/SOIL SAMPLING LOGS

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

Identifier:	Date:
PH01	1/22/20
Project Name: PLU 15 TWR PLU C1 Frac Pond	RP Number:
Logged By: Ellie N.	Method: Backhoe
Lat/Long:	Field Screening: Chloride + TPH
Hole Diameter:	Total Depth: 45ft

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
0930	D	>160	0.0	N		1	1ft	S	fine sand, trace silt, no odor, brown
0935	D	>160	0.0	N		2	2ft		fine sand, trace silt, no odor, brown to orange
0940	D	>160	0.0	N		3	3ft		SAA
0945	D	>160	0.0	N		4	4ft		SAA
						6			
						8			
						10			
						12			
						14			
						16			
						18			
						20			
						12			

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

Identifier: PH02	Date: 1/22/20
Project Name: PLU 15 TWR PLU C1 Frac Pond	RP Number:
Logged By: Ellie N	Method: Backhoe
Hole Diameter:	Total Depth: 2'

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	>160	0.0	N		1	1ft		Fine sand, trace silt
D	>160	0.0	N		2	2ft		SAA
					3			
					4			
					6			
					8			
					10			
					12			
					14			
					16			
					18			
					20			
					12			

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

Identifier:	Date:
PH03	1/22/20
Project Name: PLU 15 TWR PLU C1 Frac Pond	RP Number:
Logged By: Ellie N	Method: Backhoe
Hole Diameter:	Total Depth: 4'

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
1010 D	2,811	0.0	N		1	1ft	S	fine sand, trace silt, brown
1015 D	3,560	0.0	N		2	2ft	S	SAA
1020 D	3,520	0.0	N		3	3ft	S	SAA
1025 D	2,441	0.0	N		4	4ft	S	SAA
					6			
					8			
					10			
					12			
					14			
					16			
					18			
					20			
					12			

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

Identifier:	Date:
P-04	1/22/20
Project Name: PLU 15 TWR PLU C1 Frac Pond	RP Number:
Logged By: Ellie N.	Method: Backhoe
Hole Diameter:	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: TPH + Chloride

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1025 D	2420	0.0	N		1	1ft		fine sand, trace silt, brown, no odor
1030 D	2620	0.0	N		2	2ft		SAA
1035 D	778	0.0	N		3	3ft		SAA
1040 D	>160	0.0	N		4	4ft		SAA
					6			
					8			
					10			
					12			
					14			
					16			
					18			
					20			
					12			

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

Identifier: PH05	Date: 1/22/20
Project Name: PLU 15 TWR PLU C1 Frac Pond	RP Number:
Logged By: Ellie N	Method: Backhoe
Hole Diameter:	Total Depth: 4'
Lat/Long:	Field Screening: Chloride & TPH

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1045	35,000	6.0			1	1ft		fine sand, trace silt, orangy brown, no odor
1050	2,620	0.0			2	2ft		SAA
1055	487	0.0			3	3ft		SAA
1100	2160	0.0			4	4ft		SAA
					6			
					8			
					10			
					12			
					14			
					16			
					18			
					20			
					12			