

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	NCE2002756541
District RP	
Facility ID	
Application ID	

NQUX4-191202-C-1410

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 32.201506 Longitude -103.883480
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	PLU 261	Site Type	Well Location
Date Release Discovered	11/18/2019	API# (if applicable)	30-015-34877

Unit Letter	Section	Township	Range	County
J	21	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)

<input type="checkbox"/> Crude Oil	Volume Released (bbls) 0.0	Volume Recovered (bbls) 0.0
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 141.23	Volume Recovered (bbls) 140.0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: The seal on the transfer pump went out and released 141.23 bbls of produced water. A vacuum truck recovered 120 bbls in the lined containment and 20 bbls outside containment. Additional third party resources have been retained to assist in the remediation.

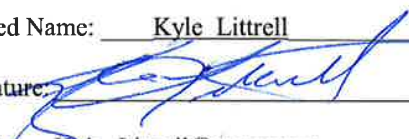
State of New Mexico
Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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 email from Adrian Baker to Bratcher, Mike, EMNRD; Hamlet, Robert, EMNRD; Venegas, Victoria, EMNRD; 'blm_nm_cfo_spill@blm.gov'; 'Jim.Griswold@state.nm.us' on November 19, 2019 8:32 AM.	

Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> 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: <u>Kyle Littrell</u>	Title: <u>SH&E Supervisor</u>
Signature: 	Date: <u>12/2/2019</u>
email: <u>Kyle_Littrell@xtoenergy.com</u>	Telephone: _____
<u>OCD Only</u>	
Received by: <u>Cristina Eads</u>	Date: <u>01/27/2020</u>

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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?	<u>>100</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

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

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

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

Printed Name: _____ Kyle Littrell _____ Title: _____ SH&E Coordinator _____

Signature: _____  _____ Date: _____ 02/14/2020 _____

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

OCD Only

Received by: _____ Cristina Eads _____ Date: _____ 03/20/2020 _____

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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: 02/14/2020

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

OCD Only

Received by: Cristina Eads Date: 03/20/2020

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: Denied Date: 03/20/2020

Printed Name: Cristina Eads Title: Environmental Specialist



LT Environmental, Inc.

3300 North "A" Street
Building 1, Unit 222
Midland, Texas 79705
432.704.5178

February 14, 2020

Mr. Mike Bratcher
New Mexico Oil Conservation Division
811 South First Street
Artesia, New Mexico 88210**RE: Closure Request
Poker Lake Unit 261
Incident Number NCE2002756541
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, excavation, and soil sampling activities at the Poker Lake Unit 261 (Site) located in Unit J, Section 21, Township 24 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment, excavation, and soil sampling activities was to address impacts to soil following a release of produced water at the Site. Based on excavation activities and results of the soil sampling events, XTO is submitting this Closure Request and respectfully requesting no further action (NFA) for Incident Number NCE2002756541.

RELEASE BACKGROUND

On November 18, 2019, a seal failed on a transfer pump, resulting in approximately 141.23 barrels (bbls) of produced water to be released within and around a lined containment on the caliche well pad. A vacuum truck was dispatched to the Site to recover free-standing fluid; approximately 140.0 bbls of produced water were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on December 2, 2019 and was subsequently assigned Incident Number NCE2002756541.

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 closest permitted groundwater wells with depth to groundwater data is United States Geological Survey (USGS) well 321214103525501 located approximately 966 feet north of the Site. The groundwater well has a





depth to groundwater of approximately 339 feet bgs. The total depth of the well is undetermined. Ground surface elevation at the groundwater well location is 3,371 feet above mean sea level (amsl), which is approximately 45 feet higher in elevation than the Site. The closest continuously-flowing water or significant watercourse to the Site is an intermittent streambed located approximately 611 feet to the south-southeast. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a low potential karst area. The Site receptors are identified on Figure 1.

CLOSURE CRITERIA

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

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

SITE ASSESSMENT, EXCAVATION, AND DELINEATION ACTIVITIES

On December 4, 2019, LTE personnel conducted reconnaissance at the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. LTE personnel collected four preliminary soil samples SS01 through SS04 from within the release extent from a depth of approximately 0.5 feet bgs to assess the lateral extent of impacted soil. Soil from the preliminary soil samples was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. The release extent and 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 excavation activities. Photographs are included in Attachment 1.

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





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

Laboratory analytical results for preliminary soil sample SS03 indicated that TPH-GRO, TPH-DRO and TPH concentrations exceeded the Closure Criteria. Based on the laboratory analytical results for the preliminary soil sample and field observations, excavation and delineation activities appeared to be warranted and occurred simultaneously. Laboratory analytical results for the preliminary soil samples are presented on Figure 2 and summarized in Table 1.

On February 6 and February 11, 2020, LTE advanced three boreholes in the area of the release that was not scheduled to be excavated. Boreholes BH01 through BH03 were advanced via hand-auger to a depth of approximately 1 foot through 2 feet bgs. Two soil samples were collected from each borehole at depths of approximately 0.5 foot and one foot or two feet bgs. Soil from the boreholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated PID and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for each borehole were logged on lithologic/soil sampling logs, which are included in Attachment 2. The delineation soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Carlsbad, New Mexico. The boreholes were backfilled with the soil removed. The borehole and delineation soil sample locations are depicted on Figure 3.

On February 6 and February 11, 2020, LTE personnel oversaw excavation of impacted soil in the area of preliminary soil sample SS03 via hand-shoveling. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. The extent of the excavation is presented on Figure 4. The excavation was approximately 2 feet in depth.

Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. One sidewall sample (SW01) and one floor sample (FS01) was collected. Based on the laboratory analytical results for excavation soil sample SW01, additional excavation activities appeared to be warranted. Following further excavation in this area, an additional excavation soil sample was collected (SW02). The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. The excavation soil samples were collected, handled, and analyzed as described above at Xenco in Carlsbad, New Mexico. The excavation extent and soil sample locations are depicted on Figure 4.

The final excavation extent measured approximately 6 square feet in area. A total of approximately 2 cubic yards of impacted soil were removed from the excavation. The impacted soil was transported and properly disposed of at the R360 landfill facility located in Hobbs, New Mexico.





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ANALYTICAL RESULTS

Laboratory analytical results indicated that benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in preliminary soil samples SS01, SS02, and SS04. Laboratory analytical results for preliminary soil sample SS03 indicated that TPH-GRO, TPH-DRO, and TPH concentrations exceeded the Closure Criteria, with concentrations of 2,260 mg/kg for TPH-GRO and TPH-DRO and 2,700 mg/kg for TPH.

LTE advanced three boreholes in the locations of preliminary soil samples SS01, SS02, and SS04 to confirm the presence or absence of impacted soil. Laboratory analytical results indicated that benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in delineation soil samples BH01/BH01A through BH03/BH03A. Laboratory analytical results are summarized in Table 1. The complete laboratory analytical reports are included as Attachment 3.

Following removal of impacted soil in the area of preliminary soil sample SS03, LTE collected confirmation soil samples within the excavation extent. Laboratory analytical results indicated that benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in excavation soil sample FS01. Laboratory analytical results for excavation soil sample SW01 indicated that TPH-GRO and TPH-DRO concentrations exceeded the Closure Criteria, and further excavation of impacted soil appeared to be warranted. Following the additional excavation activities on the area of excavation soil sample SW01, excavation soil sample SW02 was collected. Laboratory analytical results indicated that benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in excavation soil sample SW02.

CONCLUSIONS

Preliminary soil samples SS01 through SS04 were collected from within the release extent at depths of 0.5 feet bgs to assess the presence or absence of impacted soil. Laboratory analytical results indicated that benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in preliminary soil samples SS01, SS02, and SS04. Laboratory analytical results for preliminary soil sample SS03 indicated that TPH-GRO, TPH-DRO, and TPH concentrations exceeded the Closure Criteria.

LTE advanced three boreholes in the locations of preliminary soil samples SS01, SS02, and SS04 to confirm the presence or absence of impacted soil. Laboratory analytical results indicated that benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in delineation soil samples BH01/BH01A through BH03/BH03A.

Soil in the area of preliminary soil sample SS03 was removed to a depth of approximately two feet bgs. Following removal of impacted soil, LTE collected confirmation soil samples within the





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excavation extent at depths of approximately two feet bgs. Laboratory analytical results indicated that benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in confirmation soil samples FS01 and SW02.

Initial response effort and remedial activities have mitigated impacts at this Site. XTO requests NFA for Incident Number NCE2002756541.

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

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in cursive script, reading 'Carol Ann Whaley'.

Carol Ann Whaley
Staff Geologist

A handwritten signature in cursive script, reading 'Ashley L. Ager'.

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
U.S. Bureau of Land Management – New Mexico Office
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD

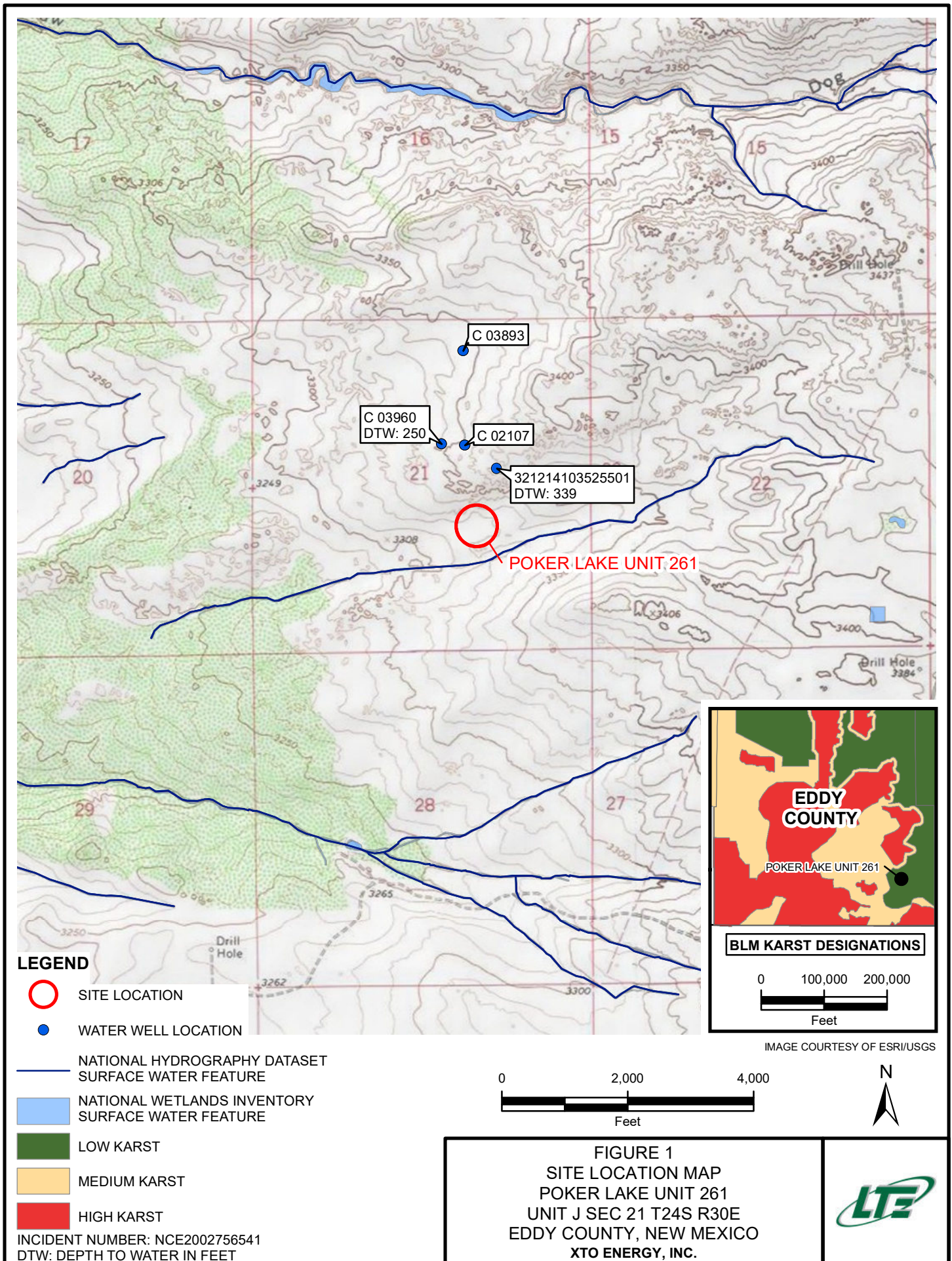
Appendices:

Figure 1 Site Receptor 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
Attachment 2 Lithologic/Soil Sampling Logs
Attachment 3 Laboratory Analytical Reports



FIGURES





SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
 SAMPLE DATE
 NMOCD TABLE 1 CLOSURE CRITERIA (NMAC 19.15.29.12)
 B = 10 mg/kg
 BTEX = 50 mg/kg
 GRO+DRO = 1,000 mg/kg
 TPH = 2,500 mg/kg
 Cl = 20,000 mg/kg
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT
BOLD: INDICATES RESULT EXCEEDS THE
 APPLICABLE REGULATORY CLOSURE CRITERIA

SS02@0.5'
 12/04/2019
 B: <0.00199
 BTEX: <0.00199
 GRO+DRO: <50.0
 TPH: <50.0
 Cl: 15,700

SS01@0.5'
 12/04/2019
 B: <0.00198
 BTEX: <0.00198
 GRO+DRO: 913
 TPH: 1,240
 Cl: 11,100

SS03@0.5'
 12/04/2019
 B: <0.00199
 BTEX: <0.00199
 GRO+DRO: **2,260**
 TPH: **2,700**
 Cl: 5,310

SS04@0.5'
 12/04/2019
 B: <0.00200
 BTEX: <0.00200
 GRO+DRO: <49.9
 TPH: <49.9
 Cl: 18,200

LEGEND



RELEASE LOCATION



PRELIMINARY SOIL SAMPLE WITH CONCENTRATIONS
 EXCEEDING APPLICABLE CLOSURE CRITERIA



PRELIMINARY SOIL SAMPLE IN COMPLIANCE
 WITH APPLICABLE CLOSURE CRITERIA



RELEASE EXTENT

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

INCIDENT NUMBER: NCE2002756541

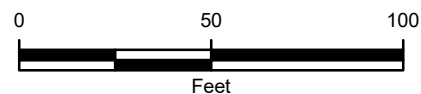


IMAGE COURTESY OF ESRI

FIGURE 2
 PRELIMINARY SOIL SAMPLE LOCATIONS
 POKER LAKE UNIT 261
 UNIT J SEC 21 T24S R30E
 EDDY COUNTY, NEW MEXICO
 XTO ENERGY, INC.



SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
 SAMPLE DATE
 NMOCD TABLE 1 CLOSURE CRITERIA (NMAC 19.15.29.12)
 B = 10 mg/kg
 BTEX = 50 mg/kg
 GRO+DRO = 1,000 mg/kg
 TPH = 2,500 mg/kg
 Cl = 20,000 mg/kg
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT

BH02@0.5'
 02/11/2020
 B: <0.00199
 BTEX: <0.00199
 GRO+DRO: 319
 TPH: 396
 Cl: 1,950

BH02A@1'
 02/06/2020
 B: <0.00200
 BTEX: <0.00200
 GRO+DRO: 755
 TPH: 884
 Cl: 311

BH01@1'
 02/06/2020
 B: <0.00199
 BTEX: <0.00199
 GRO+DRO: 239
 TPH: 239
 Cl: 2,250

BH01A@2'
 02/06/2020
 B: <0.00200
 BTEX: <0.00200
 GRO+DRO: 163
 TPH: 163
 Cl: 1,530

BH03@0.5'
 02/11/2020
 B: <0.00198
 BTEX: <0.00198
 GRO+DRO: <49.8
 TPH: <49.8
 Cl: 11,000

BH03A@1'
 02/06/2020
 B: <0.00198
 BTEX: <0.00198
 GRO+DRO: 909
 TPH: 1,080
 Cl: 290

LEGEND



RELEASE LOCATION



DELINEATION SOIL SAMPLE IN COMPLIANCE
 WITH APPLICABLE CLOSURE CRITERIA



RELEASE EXTENT

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

INCIDENT NUMBER: NCE2002756541

IMAGE COURTESY OF ESRI

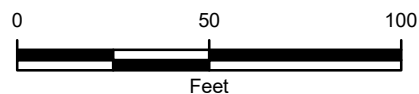
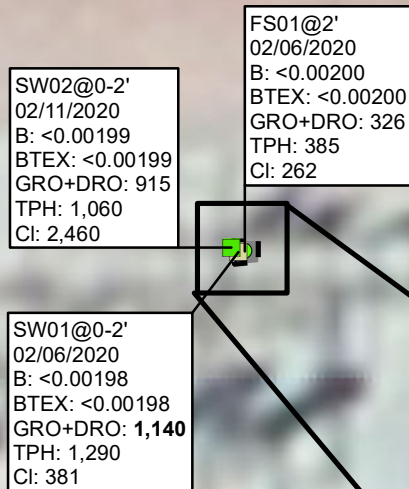


FIGURE 3
DELINEATION SOIL SAMPLE LOCATIONS
POKER LAKE UNIT 261
UNIT J SEC 21 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
 SAMPLE DATE
 NMOCD TABLE 1 CLOSURE CRITERIA (NMAC 19.15.29.12)
 B = 10 mg/kg
 BTEX = 50 mg/kg
 GRO+DRO = 1,000 mg/kg
 TPH = 2,500 mg/kg
 Cl = 20,000 mg/kg
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT
BOLD: INDICATES RESULT EXCEEDS THE
 APPLICABLE REGULATORY CLOSURE CRITERIA



LEGEND

- RELEASE LOCATION
- SIDEWALL SAMPLE PREVIOUSLY EXCEEDING APPLICABLE CLOSURE CRITERIA AND HAS BEEN EXCAVATED
- SIDEWALL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- FLOOR SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- EXCAVATION EXTENT

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
 INCIDENT NUMBER: NCE2002756541

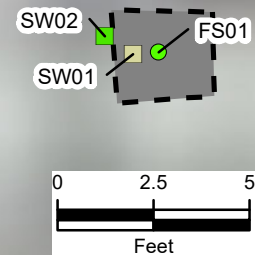


IMAGE COURTESY OF ESRI

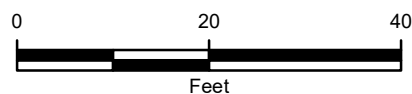


FIGURE 4
 EXCAVATION SOIL SAMPLE LOCATIONS
 POKER LAKE UNIT 261
 UNIT J SEC 21 T24S R30E
 EDDY COUNTY, NEW MEXICO
 XTO ENERGY, INC.



TABLE



**TABLE 1
SOIL ANALYTICAL RESULTS**

**POKER LAKE UNIT 261
INCIDENT NUMBER NCE2002756541
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	<49.9	913	325	913	1,240	11,100
SS02	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	15,700
SS03	0.5	12/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	2,260	438	2,260	2,700	5,310
SS04	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	18,200
BH01	1	02/06/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.3	239	<50.3	239	239	2,250
BH01A	2	02/06/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	163	<50.3	163	163	1530
BH02	0.5	02/11/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	319	76.5	319	396	1,950
BH02A	1	02/06/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	755	129	755	884	311
BH03	0.5	02/11/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.8	<49.8	<49.8	<49.8	<49.8	11,000
BH03A	1	02/06/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	909	175	909	1,080	290
FS01	2	02/06/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	326	58.7	326	385	262
SW01	0 - 2	02/06/2020	<0.00198	0.00368	0.0169	0.0223	0.0429	<50.0	1,140	145	1,140	1,290	381
SW02	0 - 2	02/11/2020	<0.00199	<0.00199	0.00209	<0.00199	0.00209	<49.8	915	143	915	1,060	2,460

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



ATTACHMENT 1: PHOTOGRAPHIC LOG



PHOTOGRAPHIC LOG




Photograph 1: View of excavation extent during excavation activities.





Photograph 2: Southern view of final excavation extent during confirmation soil sampling activities.

ATTACHMENT 2: LITHOLOGIC/SOIL SAMPLING LOGS



 <p>LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation</p>		Identifier: BH01	Date: 2/11/2020					
		Project Name: PLU 261	RP Number:					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: FS	Method: hang auger					
Lat/Long:		Field Screening: PID/HACH	Hole Diameter: 4"					
Total Depth: 1'								
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	929	6.9	no	BH01	0			
						0.5'	SP	poorly graded sand with gravel, tan/light brown
dry	1,719	1.0	no	BH01A	1	1'	SP	poorly graded sand with gravel, tan/light brown
								Total Depth 1 foot bgs
					2			
					3			
					4			
					5			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation					Identifier: BH02		Date: 2/11/2020		
					Project Name: PLU 261		RP Number:		
LITHOLOGIC / SOIL SAMPLING LOG					Logged By: FS		Method: hang auger		
Lat/Long:			Field Screening: PID/HACH			Hole Diameter: 4"		Total Depth: 1'	
Comments:									
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks	
dry	N/A	0.5	no	BH02	0				
						0.5'	SP	poorly graded sand with gravel, tan/light brown	
dry	1,848	3.3	no	BH02A	1	1'	SP	poorly graded sand with gravel, tan/light brown	
								Total Depth 1 foot bgs	
					2				
					3				
					4				
					5				

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation					Identifier: BH03		Date: 2/11/2020		
					Project Name: PLU 261		RP Number:		
LITHOLOGIC / SOIL SAMPLING LOG					Logged By: FS		Method: hang auger		
Lat/Long:			Field Screening: PID/HACH			Hole Diameter: 4"		Total Depth: 1'	
Comments:									
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks	
dry	N/A	0.0	no	BH03	0				
						0.5'	SP	poorly graded sand with gravel, tan/light brown	
dry	N/A	1.2	no	BH03A	1	1'	SP	poorly graded sand with gravel, tan/light brown	
								Total Depth 1 foot bgs	
					2				
					3				
					4				
					5				

ATTACHMENT 3: LABORATORY ANALYTICAL REPORTS



Analytical Report 645195

**for
LT Environmental, Inc.**

Project Manager: Dan Moir

PLU 261

012919289

12-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)



12-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **645195**

PLU 261

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) 645195. 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. 645195 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,

A handwritten signature in black ink that reads '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 645195****LT Environmental, Inc., Arvada, CO**

PLU 261

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	12-04-19 11:15	0.5 ft	645195-001
SS02	S	12-04-19 11:20	0.5 ft	645195-002
SS03	S	12-04-19 11:25	0.5 ft	645195-003
SS04	S	12-04-19 11:30	0.5 ft	645195-004

**CASE NARRATIVE***Client Name: LT Environmental, Inc.**Project Name: PLU 261*

Project ID: 012919289
Work Order Number(s): 645195

Report Date: 12-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

Lab Sample ID 645195-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 645195-001, -002, -003, -004.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

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



Certificate of Analysis Summary 645195

LT Environmental, Inc., Arvada, CO

Project Name: PLU 261

Project Id: 012919289

Contact: Dan Moir

Project Location: Eddy County

Date Received in Lab: Thu Dec-05-19 08:20 am

Report Date: 12-DEC-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	645195-001	645195-002	645195-003	645195-004		
	<i>Field Id:</i>	SS01	SS02	SS03	SS04		
	<i>Depth:</i>	0.5- ft	0.5- ft	0.5- ft	0.5- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Dec-04-19 11:15	Dec-04-19 11:20	Dec-04-19 11:25	Dec-04-19 11:30		
BTEX by EPA 8021B SUB: T104704400-19-19	<i>Extracted:</i>	Dec-06-19 13:00	Dec-06-19 13:00	Dec-06-19 13:00	Dec-06-19 13:00		
	<i>Analyzed:</i>	Dec-06-19 22:47	Dec-06-19 23:07	Dec-06-19 23:27	Dec-06-19 23:47		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200		
Toluene		<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200		
Ethylbenzene		<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200		
m,p-Xylenes		<0.00396 0.00396	<0.00398 0.00398	<0.00398 0.00398	<0.00399 0.00399		
o-Xylene		<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200		
Total Xylenes		<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200		
Total BTEX		<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200		
Chloride by EPA 300 SUB: T104704400-19-19	<i>Extracted:</i>	Dec-06-19 15:35	Dec-06-19 15:35	Dec-06-19 15:35	Dec-06-19 15:35		
	<i>Analyzed:</i>	Dec-06-19 20:00	Dec-06-19 20:08	Dec-06-19 20:15	Dec-06-19 20:22		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		11100 49.9	15700 100	5310 24.8	18200 100		
TPH by SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	Dec-06-19 16:00	Dec-06-19 16:00	Dec-06-19 16:00	Dec-09-19 14:00		
	<i>Analyzed:</i>	Dec-07-19 10:11	Dec-07-19 06:16	Dec-07-19 06:35	Dec-10-19 00:01		
	<i>Units/RL:</i>	mg/kg 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	<49.9 49.9		
Diesel Range Organics (DRO)		913 49.9	<50.0 50.0	2260 49.9	<49.9 49.9		
Motor Oil Range Hydrocarbons (MRO)		325 49.9	<50.0 50.0	438 49.9	<49.9 49.9		
Total GRO-DRO		913 49.9	<50.0 50.0	2260 49.9	<49.9 49.9		
Total TPH		1240 49.9	<50.0 50.0	2700 49.9	<49.9 49.9		

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 645195

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **SS01** Matrix: Soil Date Received: 12.05.19 08.20
 Lab Sample Id: 645195-001 Date Collected: 12.04.19 11.15 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 12.06.19 15.35 Basis: Wet Weight
 Seq Number: 3109711 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11100	49.9	mg/kg	12.06.19 20.00		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	<49.9	49.9	mg/kg	12.07.19 10.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	913	49.9	mg/kg	12.07.19 10.11		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	325	49.9	mg/kg	12.07.19 10.11		1
Total GRO-DRO	PHC628	913	49.9	mg/kg	12.07.19 10.11		1
Total TPH	PHC635	1240	49.9	mg/kg	12.07.19 10.11		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	12.07.19 10.11	
o-Terphenyl	84-15-1	111	%	70-135	12.07.19 10.11	



Certificate of Analytical Results 645195

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **SS01**
Lab Sample Id: 645195-001

Matrix: Soil
Date Collected: 12.04.19 11.15

Date Received: 12.05.19 08.20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3109741

Prep Method: SW5030B

% Moisture:

Date Prep: 12.06.19 13.00

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.06.19 22.47	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.06.19 22.47	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.06.19 22.47	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	12.06.19 22.47	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.06.19 22.47	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.06.19 22.47	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.06.19 22.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	12.06.19 22.47		
4-Bromofluorobenzene	460-00-4	102	%	70-130	12.06.19 22.47		



Certificate of Analytical Results 645195

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **SS02** Matrix: Soil Date Received: 12.05.19 08.20
 Lab Sample Id: 645195-002 Date Collected: 12.04.19 11.20 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 12.06.19 15.35 Basis: Wet Weight
 Seq Number: 3109711 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15700	100	mg/kg	12.06.19 20.08		20

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 06.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.07.19 06.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.07.19 06.16	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	12.07.19 06.16	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.07.19 06.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	12.07.19 06.16	
o-Terphenyl	84-15-1	103	%	70-135	12.07.19 06.16	



Certificate of Analytical Results 645195

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **SS02**
Lab Sample Id: 645195-002

Matrix: Soil
Date Collected: 12.04.19 11.20

Date Received: 12.05.19 08.20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3109741

Prep Method: SW5030B

% Moisture:

Date Prep: 12.06.19 13.00

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.06.19 23.07	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.06.19 23.07	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.06.19 23.07	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.06.19 23.07	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.06.19 23.07	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.06.19 23.07	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.06.19 23.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	12.06.19 23.07		
4-Bromofluorobenzene	460-00-4	98	%	70-130	12.06.19 23.07		



Certificate of Analytical Results 645195

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **SS03**
Lab Sample Id: 645195-003

Matrix: Soil
Date Collected: 12.04.19 11.25

Date Received: 12.05.19 08.20
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3109711

Date Prep: 12.06.19 15.35

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5310	24.8	mg/kg	12.06.19 20.15		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3109756

Date Prep: 12.06.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

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 06.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	2260	49.9	mg/kg	12.07.19 06.35		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	438	49.9	mg/kg	12.07.19 06.35		1
Total GRO-DRO	PHC628	2260	49.9	mg/kg	12.07.19 06.35		1
Total TPH	PHC635	2700	49.9	mg/kg	12.07.19 06.35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	12.07.19 06.35	
o-Terphenyl	84-15-1	129	%	70-135	12.07.19 06.35	



Certificate of Analytical Results 645195

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **SS03**
Lab Sample Id: 645195-003

Matrix: Soil
Date Collected: 12.04.19 11.25

Date Received: 12.05.19 08.20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3109741

Prep Method: SW5030B

% Moisture:

Date Prep: 12.06.19 13.00

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.06.19 23.27	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.06.19 23.27	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.06.19 23.27	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.06.19 23.27	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.06.19 23.27	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.06.19 23.27	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.06.19 23.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	12.06.19 23.27		
1,4-Difluorobenzene	540-36-3	93	%	70-130	12.06.19 23.27		



Certificate of Analytical Results 645195

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **SS04** Matrix: Soil Date Received: 12.05.19 08.20
 Lab Sample Id: 645195-004 Date Collected: 12.04.19 11.30 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 12.06.19 15.35 Basis: Wet Weight
 Seq Number: 3109711 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18200	100	mg/kg	12.06.19 20.22		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 12.09.19 14.00 Basis: Wet Weight
 Seq Number: 3109953 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	12.10.19 00.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.10.19 00.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.10.19 00.01	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	12.10.19 00.01	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.10.19 00.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	12.10.19 00.01	
o-Terphenyl	84-15-1	107	%	70-135	12.10.19 00.01	



Certificate of Analytical Results 645195

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **SS04**
Lab Sample Id: 645195-004

Matrix: Soil
Date Collected: 12.04.19 11.30

Date Received: 12.05.19 08.20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3109741

Prep Method: SW5030B

% Moisture:

Date Prep: 12.06.19 13.00

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.06.19 23.47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.06.19 23.47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.06.19 23.47	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.06.19 23.47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.06.19 23.47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.06.19 23.47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.06.19 23.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	70-130	12.06.19 23.47		
4-Bromofluorobenzene	460-00-4	106	%	70-130	12.06.19 23.47		



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



LT Environmental, Inc.

PLU 261

Analytical Method: Chloride by EPA 300

Seq Number: 3109711

MB Sample Id: 7691907-1-BLK

Matrix: Solid

LCS Sample Id: 7691907-1-BKS

Prep Method: E300P

Date Prep: 12.06.19

LCSD Sample Id: 7691907-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	253	101	252	101	90-110	0	20	mg/kg	12.06.19 16:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3109711

Parent Sample Id: 645352-019

Matrix: Soil

MS Sample Id: 645352-019 S

Prep Method: E300P

Date Prep: 12.06.19

MSD Sample Id: 645352-019 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	144	248	390	99	391	100	90-110	0	20	mg/kg	12.06.19 17:13	

Analytical Method: Chloride by EPA 300

Seq Number: 3109711

Parent Sample Id: 645368-007

Matrix: Soil

MS Sample Id: 645368-007 S

Prep Method: E300P

Date Prep: 12.06.19

MSD Sample Id: 645368-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	62.0	249	302	96	313	101	90-110	4	20	mg/kg	12.06.19 18:55	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109756

MB Sample Id: 7691874-1-BLK

Matrix: Solid

LCS Sample Id: 7691874-1-BKS

Prep Method: SW8015P

Date Prep: 12.06.19

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

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



LT Environmental, Inc.

PLU 261

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109953

MB Sample Id: 7691989-1-BLK

Matrix: Solid

LCS Sample Id: 7691989-1-BKS

Prep Method: SW8015P

Date Prep: 12.09.19

LCSD Sample Id: 7691989-1-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	887	89	894	89	70-135	1	20	mg/kg	12.09.19 18:24	
Diesel Range Organics (DRO)	<50.0	1000	922	92	914	91	70-135	1	20	mg/kg	12.09.19 18:24	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		108		114		70-135	%	12.09.19 18:24
o-Terphenyl	95		104		103		70-135	%	12.09.19 18:24

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109756

Matrix: Solid

MB Sample Id: 7691874-1-BLK

Prep Method: SW8015P

Date Prep: 12.06.19

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

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109756

Matrix: Solid

MB Sample Id: 7691989-1-BLK

Prep Method: SW8015P

Date Prep: 12.09.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.09.19 18:03	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109756

Matrix: Soil

Parent Sample Id: 645199-001

MS Sample Id: 645199-001 S

Prep Method: SW8015P

Date Prep: 12.06.19

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

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



LT Environmental, Inc.

PLU 261

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109953

Parent Sample Id: 645541-002

Matrix: Soil

MS Sample Id: 645541-002 S

Prep Method: SW8015P

Date Prep: 12.09.19

MSD Sample Id: 645541-002 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	1070	107	1100	110	70-135	3	20	mg/kg	12.09.19 19:28	
Diesel Range Organics (DRO)	81.7	997	1060	98	1090	101	70-135	3	20	mg/kg	12.09.19 19:28	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		118		70-135	%	12.09.19 19:28
o-Terphenyl	109		110		70-135	%	12.09.19 19:28

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109741

MB Sample Id: 7691847-1-BLK

Matrix: Solid

LCS Sample Id: 7691847-1-BKS

Prep Method: SW5030B

Date Prep: 12.06.19

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

Seq Number: 3109741

Parent Sample Id: 645195-001

Matrix: Soil

MS Sample Id: 645195-001 S

Prep Method: SW5030B

Date Prep: 12.06.19

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
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



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
Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 281-1111
Hobbs, NM (575-392-7550)

Chain of Custody

Work Order No:

1045195

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Page 1 of 1

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

Work Order Comments									
Program: UST/PST <input type="checkbox"/> RP <input type="checkbox"/> Brownfields <input type="checkbox"/> RC <input type="checkbox"/> Superfund <input type="checkbox"/>									
State of Project:									
Reporting Level II <input type="checkbox"/> Level III <input type="checkbox"/> UST <input type="checkbox"/> RP <input type="checkbox"/> Level IV <input type="checkbox"/>									
Deliverables: EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other: <input type="checkbox"/>									

ANALYSIS REQUEST						Work Order Notes
Project Name:		P.L.O. 261		Turn Around		
Project Number:		012919289		Routine <input checked="" type="checkbox"/>		
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):		Thermometer ID				
Received Intact:		Yes No				
Cooler Custody Seals:		Yes No	N/A	Correction Factor:	+0.2	
Sample Custody Seals:		Yes No	N/A	Total Containers:	4	
Sample Identification		Matrix	Date Sampled	Time Sampled	Depth	TAT starts the day received by the lab, if received by 4:30pm
SS01		S	12/4/19	1115	0.5'	
SS02				1120		
SS03				1125		
SS04				1130		
						discrete
						↑
			</			

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.

Circle Method(s) and Metal(s) to be analyzed	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 SiO ₂ Na Sr Ti Sn U V Zn	
TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U		1631 / 245.1 / 7470 / 7471 : Hg

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>Elyse M. Mader</i>	<i>[Signature]</i>	12/05/19 0820	2		
3			4		
5			6		

Revised Date 05/14/18 Rev. 2018

Inter-Office Shipment

IOS Number : **53601**

Date/Time: 12.05.2019

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 777164568552

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
645195-001	S	SS01	12.04.2019 11:15	SW8015MOD_NM	TPH by SW8015 Mod	12.11.2019	12.18.2019	JKR	GRO-DRO PHCC10C28	
645195-001	S	SS01	12.04.2019 11:15	SW8021B	BTEX by EPA 8021B	12.11.2019	12.18.2019	JKR	BZ BZME EBZ XYLENE	
645195-001	S	SS01	12.04.2019 11:15	E300_CL	Chloride by EPA 300	12.11.2019	06.01.2020	JKR	CL	
645195-002	S	SS02	12.04.2019 11:20	SW8021B	BTEX by EPA 8021B	12.11.2019	12.18.2019	JKR	BZ BZME EBZ XYLENE	
645195-002	S	SS02	12.04.2019 11:20	SW8015MOD_NM	TPH by SW8015 Mod	12.11.2019	12.18.2019	JKR	GRO-DRO PHCC10C28	
645195-002	S	SS02	12.04.2019 11:20	E300_CL	Chloride by EPA 300	12.11.2019	06.01.2020	JKR	CL	
645195-003	S	SS03	12.04.2019 11:25	SW8021B	BTEX by EPA 8021B	12.11.2019	12.18.2019	JKR	BZ BZME EBZ XYLENE	
645195-003	S	SS03	12.04.2019 11:25	SW8015MOD_NM	TPH by SW8015 Mod	12.11.2019	12.18.2019	JKR	GRO-DRO PHCC10C28	
645195-003	S	SS03	12.04.2019 11:25	E300_CL	Chloride by EPA 300	12.11.2019	06.01.2020	JKR	CL	
645195-004	S	SS04	12.04.2019 11:30	SW8021B	BTEX by EPA 8021B	12.11.2019	12.18.2019	JKR	BZ BZME EBZ XYLENE	
645195-004	S	SS04	12.04.2019 11:30	E300_CL	Chloride by EPA 300	12.11.2019	06.01.2020	JKR	CL	
645195-004	S	SS04	12.04.2019 11:30	SW8015MOD_NM	TPH by SW8015 Mod	12.11.2019	12.18.2019	JKR	GRO-DRO PHCC10C28	

Inter Office Shipment or Sample Comments:

Relinquished By:



Elizabeth McClellan

Date Relinquished: 12.05.2019

Received By:



Brianna Teel

Date Received: 12.06.2019

Cooler Temperature: 0.5



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 53601

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 12.05.2019 11.51 AM

Received By: Brianna Teel

Date Received: 12.06.2019 11.39 AM

Sample Receipt Checklist

Comments

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: 12.06.2019



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 12/05/2019 08:20:00 AM

Work Order #: 645195

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 12/05/2019

Checklist reviewed by:

Jessica Kramer

Date: 12/10/2019

Analytical Report 651666

**for
LT Environmental, Inc.**

Project Manager: Dan Moir

PLU 261

012919289

14-FEB-20

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



14-FEB-20

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **651666**

PLU 261

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) 651666. 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. 651666 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,

A handwritten signature in black ink that reads '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 651666****LT Environmental, Inc., Arvada, CO**

PLU 261

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	02-06-20 10:48	2 ft	651666-001
SW01	S	02-06-20 11:02	0 - 2 ft	651666-002
BH01	S	02-06-20 11:23	1 ft	651666-003
BH01A	S	02-06-20 11:26	2 ft	651666-004
BH02A	S	02-06-20 11:53	1 ft	651666-005
BH03A	S	02-06-20 12:44	1 ft	651666-006



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 261

Project ID: 012919289
Work Order Number(s): 651666

Report Date: 14-FEB-20
Date Received: 02/07/2020

Sample receipt non conformances and comments:

V1.001 - Revision Corrected sample names to read as follows per Carol (email) JK 02/14/20

BH02 --> BH02A

BH03 --> BH03A

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3115988 BTEX by EPA 8021B

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



Certificate of Analysis Summary 651666

LT Environmental, Inc., Arvada, CO

Project Name: PLU 261

Project Id: 012919289

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Feb-07-20 09:38 am

Report Date: 14-FEB-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	651666-001	651666-002	651666-003	651666-004	651666-005	651666-006
	<i>Field Id:</i>	FS01	SW01	BH01	BH01A	BH02A	BH03A
	<i>Depth:</i>	2- ft	0-2 ft	1- ft	2- ft	1- ft	1- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-06-20 10:48	Feb-06-20 11:02	Feb-06-20 11:23	Feb-06-20 11:26	Feb-06-20 11:53	Feb-06-20 12:44
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-07-20 11:00	Feb-07-20 11:00	Feb-07-20 11:00	Feb-07-20 11:00	Feb-07-20 11:00	Feb-07-20 11:00
	<i>Analyzed:</i>	Feb-07-20 13:46	Feb-07-20 14:06	Feb-07-20 20:34	Feb-07-20 14:47	Feb-07-20 15:07	Feb-07-20 15:28
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Toluene		<0.00200 0.00200	0.00368 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene		<0.00200 0.00200	0.0169 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
m,p-Xylenes		<0.00399 0.00399	0.0153 0.00396	<0.00398 0.00398	<0.00399 0.00399	<0.00400 0.00400	<0.00395 0.00395
o-Xylene		<0.00200 0.00200	0.00704 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Total Xylenes		<0.00200 0.00200	0.0223 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Total BTEX		<0.00200 0.00200	0.0429 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Chloride by EPA 300	<i>Extracted:</i>	Feb-07-20 13:30	Feb-07-20 13:30	Feb-07-20 13:30	Feb-07-20 13:30	Feb-07-20 13:30	Feb-07-20 13:30
	<i>Analyzed:</i>	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *	Feb-07-20 13:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		262 9.88	381 9.84	2250 50.0	1530 49.9	311 9.92	290 10.0
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-07-20 11:30	Feb-07-20 11:30	Feb-07-20 11:30	Feb-07-20 11:30	Feb-07-20 11:30	Feb-07-20 11:30
	<i>Analyzed:</i>	Feb-07-20 12:17	Feb-07-20 12:37	Feb-07-20 12:56	Feb-07-20 12:56	Feb-07-20 13:16	Feb-07-20 13:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.0 50.0	<50.3 50.3	<50.3 50.3	<49.8 49.8	<50.2 50.2
Diesel Range Organics (DRO)		326 50.2	1140 50.0	239 50.3	163 50.3	755 49.8	909 50.2
Motor Oil Range Hydrocarbons (MRO)		58.7 50.2	145 50.0	<50.3 50.3	<50.3 50.3	129 49.8	175 50.2
Total GRO-DRO		326 50.2	1140 50.0	239 50.3	163 50.3	755 49.8	909 50.2
Total TPH		385 50.2	1290 50.0	239 50.3	163 50.3	884 49.8	1080 50.2

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

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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 651666

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **FS01** Matrix: Soil Date Received: 02.07.20 09.38
 Lab Sample Id: 651666-001 Date Collected: 02.06.20 10.48 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.07.20 13.30 Basis: Wet Weight
 Seq Number: 3115992

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	262	9.88	mg/kg	02.07.20 13.04		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.07.20 11.30 Basis: Wet Weight
 Seq Number: 3116028

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	02.07.20 12.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	326	50.2	mg/kg	02.07.20 12.17		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	58.7	50.2	mg/kg	02.07.20 12.17		1
Total GRO-DRO	PHC628	326	50.2	mg/kg	02.07.20 12.17		1
Total TPH	PHC635	385	50.2	mg/kg	02.07.20 12.17		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	02.07.20 12.17	
o-Terphenyl	84-15-1	111	%	70-135	02.07.20 12.17	



Certificate of Analytical Results 651666

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **FS01**
Lab Sample Id: 651666-001

Matrix: Soil
Date Collected: 02.06.20 10.48

Date Received: 02.07.20 09.38
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.07.20 11.00

Basis: Wet Weight

Seq Number: 3115988

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.07.20 13.46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.07.20 13.46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.07.20 13.46	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.07.20 13.46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.07.20 13.46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.07.20 13.46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.07.20 13.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.07.20 13.46		
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.07.20 13.46		



Certificate of Analytical Results 651666

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **SW01** Matrix: Soil Date Received: 02.07.20 09.38
 Lab Sample Id: 651666-002 Date Collected: 02.06.20 11.02 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.07.20 13.30 Basis: Wet Weight
 Seq Number: 3115992

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	381	9.84	mg/kg	02.07.20 13.10		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.07.20 11.30 Basis: Wet Weight
 Seq Number: 3116028

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.07.20 12.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	1140	50.0	mg/kg	02.07.20 12.37		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	145	50.0	mg/kg	02.07.20 12.37		1
Total GRO-DRO	PHC628	1140	50.0	mg/kg	02.07.20 12.37		1
Total TPH	PHC635	1290	50.0	mg/kg	02.07.20 12.37		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	02.07.20 12.37	
o-Terphenyl	84-15-1	109	%	70-135	02.07.20 12.37	



Certificate of Analytical Results 651666

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **SW01**
Lab Sample Id: 651666-002

Matrix: Soil
Date Collected: 02.06.20 11.02

Date Received: 02.07.20 09.38
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3115988

Date Prep: 02.07.20 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.07.20 14.06	U	1
Toluene	108-88-3	0.00368	0.00198	mg/kg	02.07.20 14.06		1
Ethylbenzene	100-41-4	0.0169	0.00198	mg/kg	02.07.20 14.06		1
m,p-Xylenes	179601-23-1	0.0153	0.00396	mg/kg	02.07.20 14.06		1
o-Xylene	95-47-6	0.00704	0.00198	mg/kg	02.07.20 14.06		1
Total Xylenes	1330-20-7	0.0223	0.00198	mg/kg	02.07.20 14.06		1
Total BTEX		0.0429	0.00198	mg/kg	02.07.20 14.06		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	02.07.20 14.06		
1,4-Difluorobenzene	540-36-3	101	%	70-130	02.07.20 14.06		



Certificate of Analytical Results 651666

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **BH01** Matrix: Soil Date Received: 02.07.20 09.38
 Lab Sample Id: 651666-003 Date Collected: 02.06.20 11.23 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.07.20 13.30 Basis: Wet Weight
 Seq Number: 3115992

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2250	50.0	mg/kg	02.07.20 13.15		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.07.20 11.30 Basis: Wet Weight
 Seq Number: 3116028

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	02.07.20 12.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	239	50.3	mg/kg	02.07.20 12.56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	02.07.20 12.56	U	1
Total GRO-DRO	PHC628	239	50.3	mg/kg	02.07.20 12.56		1
Total TPH	PHC635	239	50.3	mg/kg	02.07.20 12.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	02.07.20 12.56	
o-Terphenyl	84-15-1	110	%	70-135	02.07.20 12.56	



Certificate of Analytical Results 651666

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **BH01**
Lab Sample Id: 651666-003

Matrix: Soil
Date Collected: 02.06.20 11.23

Date Received: 02.07.20 09.38
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.07.20 11.00

Basis: Wet Weight

Seq Number: 3115988

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.07.20 20.34	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.07.20 20.34	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.07.20 20.34	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.07.20 20.34	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.07.20 20.34	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.07.20 20.34	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.07.20 20.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.07.20 20.34		
4-Bromofluorobenzene	460-00-4	96	%	70-130	02.07.20 20.34		



Certificate of Analytical Results 651666

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **BH01A** Matrix: Soil Date Received: 02.07.20 09.38
 Lab Sample Id: 651666-004 Date Collected: 02.06.20 11.26 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.07.20 13.30 Basis: Wet Weight
 Seq Number: 3115992

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1530	49.9	mg/kg	02.07.20 13.21		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.07.20 11.30 Basis: Wet Weight
 Seq Number: 3116028

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	02.07.20 12.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	163	50.3	mg/kg	02.07.20 12.56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	02.07.20 12.56	U	1
Total GRO-DRO	PHC628	163	50.3	mg/kg	02.07.20 12.56		1
Total TPH	PHC635	163	50.3	mg/kg	02.07.20 12.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	02.07.20 12.56	
o-Terphenyl	84-15-1	100	%	70-135	02.07.20 12.56	



Certificate of Analytical Results 651666

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **BH01A**
Lab Sample Id: 651666-004

Matrix: Soil
Date Collected: 02.06.20 11.26

Date Received: 02.07.20 09.38
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3115988

Prep Method: SW5030B

% Moisture:

Date Prep: 02.07.20 11.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.07.20 14.47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.07.20 14.47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.07.20 14.47	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.07.20 14.47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.07.20 14.47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.07.20 14.47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.07.20 14.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.07.20 14.47		
4-Bromofluorobenzene	460-00-4	96	%	70-130	02.07.20 14.47		



Certificate of Analytical Results 651666

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **BH02A** Matrix: Soil Date Received: 02.07.20 09.38
 Lab Sample Id: 651666-005 Date Collected: 02.06.20 11.53 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.07.20 13.30 Basis: Wet Weight
 Seq Number: 3115992

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	311	9.92	mg/kg	02.07.20 13.26		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.07.20 11.30 Basis: Wet Weight
 Seq Number: 3116028

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	02.07.20 13.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	755	49.8	mg/kg	02.07.20 13.16		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	129	49.8	mg/kg	02.07.20 13.16		1
Total GRO-DRO	PHC628	755	49.8	mg/kg	02.07.20 13.16		1
Total TPH	PHC635	884	49.8	mg/kg	02.07.20 13.16		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.07.20 13.16	
o-Terphenyl	84-15-1	94	%	70-135	02.07.20 13.16	



Certificate of Analytical Results 651666

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **BH02A**
Lab Sample Id: 651666-005

Matrix: Soil
Date Collected: 02.06.20 11.53

Date Received: 02.07.20 09.38
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.07.20 11.00

Basis: Wet Weight

Seq Number: 3115988

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.07.20 15.07	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.07.20 15.07	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.07.20 15.07	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.07.20 15.07	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.07.20 15.07	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.07.20 15.07	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.07.20 15.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	02.07.20 15.07		
1,4-Difluorobenzene	540-36-3	102	%	70-130	02.07.20 15.07		



Certificate of Analytical Results 651666

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **BH03A**
Lab Sample Id: 651666-006

Matrix: Soil
Date Collected: 02.06.20 12.44

Date Received: 02.07.20 09.38
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3115992

Date Prep: 02.07.20 13.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	290	10.0	mg/kg	02.07.20 13.32		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3116028

Date Prep: 02.07.20 11.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	02.07.20 13.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	909	50.2	mg/kg	02.07.20 13.16		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	175	50.2	mg/kg	02.07.20 13.16		1
Total GRO-DRO	PHC628	909	50.2	mg/kg	02.07.20 13.16		1
Total TPH	PHC635	1080	50.2	mg/kg	02.07.20 13.16		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	02.07.20 13.16	
o-Terphenyl	84-15-1	101	%	70-135	02.07.20 13.16	



Certificate of Analytical Results 651666

LT Environmental, Inc., Arvada, CO

PLU 261

Sample Id: **BH03A**
Lab Sample Id: 651666-006

Matrix: Soil
Date Collected: 02.06.20 12.44

Date Received: 02.07.20 09.38
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.07.20 11.00

Basis: Wet Weight

Seq Number: 3115988

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.07.20 15.28	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.07.20 15.28	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.07.20 15.28	U	1
m,p-Xylenes	179601-23-1	<0.00395	0.00395	mg/kg	02.07.20 15.28	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.07.20 15.28	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.07.20 15.28	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.07.20 15.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.07.20 15.28		
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.07.20 15.28		



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



LT Environmental, Inc.

PLU 261

Analytical Method: Chloride by EPA 300

Seq Number: 3115992

MB Sample Id: 7696192-1-BLK

Matrix: Solid

LCS Sample Id: 7696192-1-BKS

Prep Method: E300P

Date Prep: 02.07.20

LCSD Sample Id: 7696192-1-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	251	100	250	100	90-110	0	20	mg/kg	02.07.20 08:35	

Analytical Method: Chloride by EPA 300

Seq Number: 3115992

Parent Sample Id: 651630-001

Matrix: Soil

MS Sample Id: 651630-001 S

Prep Method: E300P

Date Prep: 02.07.20

MSD Sample Id: 651630-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4760	200	4920	80	4920	80	90-110	0	20	mg/kg	02.07.20 08:51	X

Analytical Method: Chloride by EPA 300

Seq Number: 3115992

Parent Sample Id: 651666-006

Matrix: Soil

MS Sample Id: 651666-006 S

Prep Method: E300P

Date Prep: 02.07.20

MSD Sample Id: 651666-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	290	200	495	103	490	101	90-110	1	20	mg/kg	02.07.20 13:37	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3116028

MB Sample Id: 7696243-1-BLK

Matrix: Solid

LCS Sample Id: 7696243-1-BKS

Prep Method: SW8015P

Date Prep: 02.07.20

LCSD Sample Id: 7696243-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1140	114	1060	106	70-135	7	35	mg/kg	02.07.20 11:57	
Diesel Range Organics (DRO)	<50.0	1000	1180	118	1100	110	70-135	7	35	mg/kg	02.07.20 11:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		119		117		70-135	%	02.07.20 11:57
o-Terphenyl	101		113		109		70-135	%	02.07.20 11:57

Analytical Method: TPH by SW8015 Mod

Seq Number: 3116028

Matrix: Solid

MB Sample Id: 7696243-1-BLK

Prep Method: SW8015P

Date Prep: 02.07.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.10.20 11:15	

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

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

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



LT Environmental, Inc.

PLU 261

Analytical Method: TPH by SW8015 Mod

Seq Number: 3116028

Parent Sample Id: 651666-001

Matrix: Soil

MS Sample Id: 651666-001 S

Prep Method: SW8015P

Date Prep: 02.07.20

MSD Sample Id: 651666-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	1190	119	1250	124	70-135	5	35	mg/kg	02.07.20 12:17	
Diesel Range Organics (DRO)	326	1000	1280	95	1390	105	70-135	8	35	mg/kg	02.07.20 12:17	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	131		130		70-135	%	02.07.20 12:17
o-Terphenyl	120		131		70-135	%	02.07.20 12:17

Analytical Method: BTEX by EPA 8021B

Seq Number: 3115988

MB Sample Id: 7696221-1-BLK

Matrix: Solid

LCS Sample Id: 7696221-1-BKS

Prep Method: SW5030B

Date Prep: 02.07.20

LCSD Sample Id: 7696221-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.109	109	0.115	115	70-130	5	35	mg/kg	02.07.20 12:04	
Toluene	<0.00200	0.100	0.104	104	0.110	110	70-130	6	35	mg/kg	02.07.20 12:04	
Ethylbenzene	<0.00200	0.100	0.101	101	0.106	106	71-129	5	35	mg/kg	02.07.20 12:04	
m,p-Xylenes	<0.00400	0.200	0.208	104	0.219	110	70-135	5	35	mg/kg	02.07.20 12:04	
o-Xylene	<0.00200	0.100	0.103	103	0.109	109	71-133	6	35	mg/kg	02.07.20 12:04	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		105		105		70-130	%	02.07.20 12:04
4-Bromofluorobenzene	98		95		95		70-130	%	02.07.20 12:04

Analytical Method: BTEX by EPA 8021B

Seq Number: 3115988

Parent Sample Id: 651666-001

Matrix: Soil

MS Sample Id: 651666-001 S

Prep Method: SW5030B

Date Prep: 02.07.20

MSD Sample Id: 651666-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0990	0.124	125	0.120	120	70-130	3	35	mg/kg	02.07.20 12:45	
Toluene	<0.00198	0.0990	0.117	118	0.114	114	70-130	3	35	mg/kg	02.07.20 12:45	
Ethylbenzene	<0.00198	0.0990	0.110	111	0.107	107	71-129	3	35	mg/kg	02.07.20 12:45	
m,p-Xylenes	<0.00396	0.198	0.223	113	0.217	109	70-135	3	35	mg/kg	02.07.20 12:45	
o-Xylene	<0.00198	0.0990	0.109	110	0.107	107	71-133	2	35	mg/kg	02.07.20 12:45	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		104		70-130	%	02.07.20 12:45
4-Bromofluorobenzene	95		94		70-130	%	02.07.20 12:45

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

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

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

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, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 355-0900
Tampa, FL (813) 620-2000, Tallahassee, FL (904) 755-0747, Delray Beach, FL (561) 889-6701
Atlanta, GA (770) 449-8800

Work Order No: 16311245.1

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, Inc.
Address:	3300 North A Street	Address:	3104 E Greene St
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	fsmith@ltenv.com, dmoir@ltenv.com

Work Order Comments	
Program: UST/PS <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRP <input type="checkbox"/> Superfund <input type="checkbox"/>	
State of Project:	
Reporting Level: <input type="checkbox"/> Level <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level <input type="checkbox"/>	
Deliverables: EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other:	

Project Name:	PLU 261	Turn Around		ANALYSIS REQUEST	Work Order Notes
Project Number:	012919289	Routine: <input type="checkbox"/>			
PO #:	spill date 11/18/19	Rush: 24 hrs			
Sampler's Name:	Fatima Smith	Due Date:			
SAMPLE RECEIPT		Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Wet Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Temperature (°C):	14	Thermometer ID			
Received Intact:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Correction Factor:	T - N M - 007		
Cooler Custody Seals:	Yes <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	Total Containers:	-0.2		
Sample Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	TAT starts the day received by the lab, if received by 4:30pm															
ES01	S	2/6/20	1048	2'	1	X	X	X																
SW01	S		1102	0-2'	1	X	X	X																
BH01	S		1123	1'	1	X	X	X																
BH01A	S		1126	2'	1	X	X	X																
ES BH02 BH02A	S		1153	1'	1	X	X	X																
ES BH03 BH03A	S		1244	1'	1	X	X	X																

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti 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 Ti 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
<u>Fatima Smith</u>	<u>Wittby</u>	2/12/20 19:00	<u>Wittby</u>	<u>Wittby</u>	2/17/20 9:38

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 02.07.2020 09.38.00 AM

Work Order #: 651666

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)?	1.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Elizabeth McClellan

Date: 02.07.2020

Checklist reviewed by:



Jessica Kramer

Date: 02.07.2020



Analytical Report 652020

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU #261

012919289

02.14.2020

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)



02.14.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **652020**

PLU #261

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) 652020. 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. 652020 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,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Assistant

A Small Business and Minority Company

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

**Sample Cross Reference 652020****LT Environmental, Inc., Arvada, CO**

PLU #261

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW02	S	02.11.2020 08:43	0 - 2 ft	652020-001
BH02	S	02.11.2020 08:34	0.5 ft	652020-002
BH03	S	02.11.2020 08:48	0.5 ft	652020-003



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU #261

Project ID: 012919289
Work Order Number(s): 652020

Report Date: 02.14.2020
Date Received: 02.11.2020

Sample receipt non conformances and comments:

V1.001 Revision Corrected sample names to read as follows per Carol (email) JK 02/14/20
SW01 --> SW02
BH02A --> BH02
BH03A --> BH03

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3116230 BTEX by EPA 8021B

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



Certificate of Analysis Summary 652020

LT Environmental, Inc., Arvada, CO

Project Name: PLU #261

Project Id: 012919289

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue 02.11.2020 13:45

Report Date: 02.14.2020 08:14

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	652020-001	652020-002	652020-003			
	Field Id:	SW02	BH02	BH03			
	Depth:	0-2 ft	0.5- ft	0.5- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	02.11.2020 08:43	02.11.2020 08:34	02.11.2020 08:48			
BTEX by EPA 8021B	Extracted:	02.11.2020 14:15	02.11.2020 14:15	02.11.2020 14:15			
	Analyzed:	02.11.2020 20:20	02.11.2020 20:40	02.11.2020 21:01			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198			
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198			
Ethylbenzene		0.00209 0.00199	<0.00199 0.00199	<0.00198 0.00198			
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00397 0.00397			
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198			
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198			
Total BTEX		0.00209 0.00199	<0.00199 0.00199	<0.00198 0.00198			
Chloride by EPA 300	Extracted:	02.11.2020 14:15	02.11.2020 14:15	02.11.2020 14:15			
	Analyzed:	02.11.2020 16:19	02.11.2020 16:25	02.11.2020 16:31			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		2460 49.7	1950 49.9	11000 99.2			
TPH by SW8015 Mod	Extracted:	** ** *	** ** *	** ** *			
	Analyzed:	02.11.2020 18:23	02.11.2020 18:23	02.11.2020 19:02			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<49.8 49.8	<49.9 49.9	<49.8 49.8			
Diesel Range Organics (DRO)		915 49.8	319 49.9	<49.8 49.8			
Motor Oil Range Hydrocarbons (MRO)		143 49.8	76.5 49.9	<49.8 49.8			
Total GRO-DRO		915 49.8	319 49.9	<49.8 49.8			
Total TPH		1060 49.8	396 49.9	<49.8 49.8			

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 652020

LT Environmental, Inc., Arvada, CO

PLU #261

Sample Id: **SW02** Matrix: Soil Date Received: 02.11.2020 13:45
 Lab Sample Id: 652020-001 Date Collected: 02.11.2020 08:43 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.11.2020 14:15 Basis: Wet Weight
 Seq Number: 3116234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2460	49.7	mg/kg	02.11.2020 16:19		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.11.2020 11:05 Basis: Wet Weight
 Seq Number: 3116250

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	02.11.2020 18:23	U	1
Diesel Range Organics (DRO)	C10C28DRO	915	49.8	mg/kg	02.11.2020 18:23		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	143	49.8	mg/kg	02.11.2020 18:23		1
Total GRO-DRO	PHC628	915	49.8	mg/kg	02.11.2020 18:23		1
Total TPH	PHC635	1060	49.8	mg/kg	02.11.2020 18:23		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	02.11.2020 18:23	
o-Terphenyl	84-15-1	104	%	70-135	02.11.2020 18:23	



Certificate of Analytical Results 652020

LT Environmental, Inc., Arvada, CO

PLU #261

Sample Id: **SW02**
Lab Sample Id: 652020-001

Matrix: Soil
Date Collected: 02.11.2020 08:43

Date Received: 02.11.2020 13:45
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3116230

Prep Method: SW5030B

% Moisture:

Date Prep: 02.11.2020 14:15

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.11.2020 20:20	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.11.2020 20:20	U	1
Ethylbenzene	100-41-4	0.00209	0.00199	mg/kg	02.11.2020 20:20		1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.11.2020 20:20	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.11.2020 20:20	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.11.2020 20:20	U	1
Total BTEX		0.00209	0.00199	mg/kg	02.11.2020 20:20		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	02.11.2020 20:20		
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.11.2020 20:20		



Certificate of Analytical Results 652020

LT Environmental, Inc., Arvada, CO

PLU #261

Sample Id: **BH02** Matrix: Soil Date Received: 02.11.2020 13:45
 Lab Sample Id: 652020-002 Date Collected: 02.11.2020 08:34 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.11.2020 14:15 Basis: Wet Weight
 Seq Number: 3116234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1950	49.9	mg/kg	02.11.2020 16:25		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.11.2020 11:05 Basis: Wet Weight
 Seq Number: 3116250

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.11.2020 18:23	U	1
Diesel Range Organics (DRO)	C10C28DRO	319	49.9	mg/kg	02.11.2020 18:23		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	76.5	49.9	mg/kg	02.11.2020 18:23		1
Total GRO-DRO	PHC628	319	49.9	mg/kg	02.11.2020 18:23		1
Total TPH	PHC635	396	49.9	mg/kg	02.11.2020 18:23		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	02.11.2020 18:23	
o-Terphenyl	84-15-1	133	%	70-135	02.11.2020 18:23	



Certificate of Analytical Results 652020

LT Environmental, Inc., Arvada, CO

PLU #261

Sample Id: **BH02**
Lab Sample Id: 652020-002

Matrix: Soil
Date Collected: 02.11.2020 08:34

Date Received: 02.11.2020 13:45
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3116230

Prep Method: SW5030B

% Moisture:

Date Prep: 02.11.2020 14:15

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.11.2020 20:40	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.11.2020 20:40	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.11.2020 20:40	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.11.2020 20:40	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.11.2020 20:40	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.11.2020 20:40	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.11.2020 20:40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	02.11.2020 20:40		
1,4-Difluorobenzene	540-36-3	109	%	70-130	02.11.2020 20:40		



Certificate of Analytical Results 652020

LT Environmental, Inc., Arvada, CO

PLU #261

Sample Id: **BH03**
Lab Sample Id: 652020-003

Matrix: Soil
Date Collected: 02.11.2020 08:48

Date Received: 02.11.2020 13:45
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3116234

Date Prep: 02.11.2020 14:15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11000	99.2	mg/kg	02.11.2020 16:31		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3116250

Date Prep: 02.11.2020 11:05

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	02.11.2020 19:02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	02.11.2020 19:02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	02.11.2020 19:02	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	02.11.2020 19:02	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	02.11.2020 19:02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	02.11.2020 19:02	
o-Terphenyl	84-15-1	116	%	70-135	02.11.2020 19:02	



Certificate of Analytical Results 652020

LT Environmental, Inc., Arvada, CO

PLU #261

Sample Id: **BH03**
Lab Sample Id: 652020-003

Matrix: Soil
Date Collected: 02.11.2020 08:48

Date Received: 02.11.2020 13:45
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3116230

Prep Method: SW5030B

% Moisture:

Date Prep: 02.11.2020 14:15

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.11.2020 21:01	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.11.2020 21:01	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.11.2020 21:01	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	02.11.2020 21:01	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.11.2020 21:01	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.11.2020 21:01	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.11.2020 21:01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	02.11.2020 21:01		
1,4-Difluorobenzene	540-36-3	111	%	70-130	02.11.2020 21:01		



Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

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



LT Environmental, Inc.

PLU #261

Analytical Method: Chloride by EPA 300

Seq Number: 3116234

MB Sample Id: 7696405-1-BLK

Matrix: Solid

LCS Sample Id: 7696405-1-BKS

Prep Method: E300P

Date Prep: 02.11.2020

LCSD Sample Id: 7696405-1-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	350	366	105	364	104	90-110	1	20	mg/kg	02.11.2020 13:48	

Analytical Method: Chloride by EPA 300

Seq Number: 3116234

Parent Sample Id: 651917-008

Matrix: Soil

MS Sample Id: 651917-008 S

Prep Method: E300P

Date Prep: 02.11.2020

MSD Sample Id: 651917-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	149	200	365	108	366	109	90-110	0	20	mg/kg	02.11.2020 14:05	

Analytical Method: Chloride by EPA 300

Seq Number: 3116234

Parent Sample Id: 651917-020

Matrix: Soil

MS Sample Id: 651917-020 S

Prep Method: E300P

Date Prep: 02.11.2020

MSD Sample Id: 651917-020 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1610	200	1830	110	1830	109	90-110	0	20	mg/kg	02.11.2020 15:25	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3116250

MB Sample Id: 7696428-1-BLK

Matrix: Solid

LCS Sample Id: 7696428-1-BKS

Prep Method: SW8015P

Date Prep: 02.11.2020

LCSD Sample Id: 7696428-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	887	89	845	85	70-135	5	35	mg/kg	02.11.2020 14:45	
Diesel Range Organics (DRO)	<50.0	1000	797	80	915	92	70-135	14	35	mg/kg	02.11.2020 14:45	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	123		113		120		70-135	%	02.11.2020 14:45
o-Terphenyl	120		103		116		70-135	%	02.11.2020 14:45

Analytical Method: TPH by SW8015 Mod

Seq Number: 3116250

Matrix: Solid

MB Sample Id: 7696428-1-BLK

Prep Method: SW8015P

Date Prep: 02.11.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.11.2020 14:45	

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



LT Environmental, Inc.

PLU #261

Analytical Method: TPH by SW8015 Mod

Seq Number: 3116250

Parent Sample Id: 651917-008

Matrix: Soil

MS Sample Id: 651917-008 S

Prep Method: SW8015P

Date Prep: 02.11.2020

MSD Sample Id: 651917-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	829	83	938	94	70-135	12	35	mg/kg	02.11.2020 15:25	
Diesel Range Organics (DRO)	<49.9	997	895	90	1050	105	70-135	16	35	mg/kg	02.11.2020 15:25	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		131		70-135	%	02.11.2020 15:25
o-Terphenyl	123		135		70-135	%	02.11.2020 15:25

Analytical Method: BTEX by EPA 8021B

Seq Number: 3116230

MB Sample Id: 7696403-1-BLK

Matrix: Solid

LCS Sample Id: 7696403-1-BKS

Prep Method: SW5030B

Date Prep: 02.11.2020

LCSD Sample Id: 7696403-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.122	122	0.122	122	70-130	0	35	mg/kg	02.11.2020 12:31	
Toluene	<0.00200	0.100	0.112	112	0.111	111	70-130	1	35	mg/kg	02.11.2020 12:31	
Ethylbenzene	<0.00200	0.100	0.108	108	0.107	107	71-129	1	35	mg/kg	02.11.2020 12:31	
m,p-Xylenes	<0.00400	0.200	0.211	106	0.209	105	70-135	1	35	mg/kg	02.11.2020 12:31	
o-Xylene	<0.00200	0.100	0.106	106	0.105	105	71-133	1	35	mg/kg	02.11.2020 12:31	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		108		108		70-130	%	02.11.2020 12:31
4-Bromofluorobenzene	96		91		91		70-130	%	02.11.2020 12:31

Analytical Method: BTEX by EPA 8021B

Seq Number: 3116230

Parent Sample Id: 651917-008

Matrix: Soil

MS Sample Id: 651917-008 S

Prep Method: SW5030B

Date Prep: 02.11.2020

MSD Sample Id: 651917-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.123	123	0.121	121	70-130	2	35	mg/kg	02.11.2020 13:12	
Toluene	<0.00199	0.0996	0.124	124	0.111	111	70-130	11	35	mg/kg	02.11.2020 13:12	
Ethylbenzene	<0.00199	0.0996	0.119	119	0.108	108	71-129	10	35	mg/kg	02.11.2020 13:12	
m,p-Xylenes	<0.00398	0.199	0.234	118	0.211	106	70-135	10	35	mg/kg	02.11.2020 13:12	
o-Xylene	<0.00199	0.0996	0.118	118	0.106	106	71-133	11	35	mg/kg	02.11.2020 13:12	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		109		70-130	%	02.11.2020 13:12
4-Bromofluorobenzene	94		94		70-130	%	02.11.2020 13:12

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



Chain of Custody

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) EL Paso, TX (915) 566-3443 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: 052020

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	fsmith@ltenv.com
Project Name:	PCU # 260	Turn Around	
Project Number:	# 012919289	Routine	<input type="checkbox"/>
P.O. Number:		Rush:	24H
Sampler's Name:	Fatima Smith	Due Date:	

SAMPLE RECEIPT		Temp Blank:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Wet Ice:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Temperature (°C):	0.8	Thermometer ID	TMM 007		
Received Intact:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Correction Factor:	-0.2		
Cooler Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Total Containers:	3		
Sample Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A				

Program: UST/PST	<input type="checkbox"/> PRP	<input type="checkbox"/> Brownfields	<input type="checkbox"/> RC	<input type="checkbox"/> Superfund
State of Project:				
Reporting Level II	<input type="checkbox"/> Level III	<input type="checkbox"/> PST/UST	<input type="checkbox"/> RRP	<input type="checkbox"/> Level IV
Deliverables: EDD	<input type="checkbox"/> ADAPT	Other:		

Work Order Comments		Work Order Notes	

SAMPLE IDENTIFICATION				ANALYSIS REQUEST				Work Order Notes	
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	
FS 5461 SNO2	S	2-11-20	0843	0-2'	1	X	X	X	
BH 022A	S	2-11-20	0834	.5'	1	X	X	X	
BH 033A	S	2-11-20	0848	.5'	1	X	X	X	
44 2-11-20									
TAT starts the day received by the lab, if received by 4:30pm									
					Sample Comments				

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti 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 Ti 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
		2/11/20 1345			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 02.11.2020 01.45.00 PM

Work Order #: 652020

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: 02.11.2020

Checklist reviewed by:



Jessica Kramer

Date: 02.12.2020