

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	NAB1909139455
District RP	2 2RP-5326
Facility ID	
Application ID	pAB1909139241

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) NAB1909139455
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.243313° Longitude -103.886070°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Poker Lake Unit #320H Battery	Site Type Bulk Storage and Separation Facility
Date Release Discovered 3/13/2019	API# (if applicable) 30-015-39810

Unit Letter	Section	Township	Range	County
J	4	24S	30E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 180	Volume Recovered (bbls) 160
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A release of oil was reported from a valve on a rear circulating pump sump tank. A vacuum truck recovered free standing fluids from the ground. Additional third party resources have been retained to assist with remediation.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1909139455
District RP	2 2RP-5326
Facility ID	
Application ID	pAB1909139241

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release of a volume of 25 barrels or more
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Notice provided by Bryan Foust to Mike Bratcher, Rob Hamlet, and Jim Griswold (NMOCD), Jim Amos, Crystal Weaver, and Deborah McKinney (BLM) on 3/13/2019 by email	

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <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> Signature:  email: <u>Kyle_Littrell@xtoenergy.com</u>	Title: <u>SH&E Supervisor</u> Date: <u>3/26/2019</u> Telephone: <u>432-221-7331</u>
OCD Only Received by:  Date: <u>4/1/2019</u>	

Incident ID	
District RP	2RP-5326
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

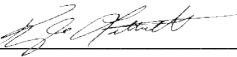
Characterization Report Checklist: <i>Each of the following items must be included in the report.</i> ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells. ☒ Field data ☒ Data table of soil contaminant concentration data ☒ Depth to water 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.

Incident ID	
District RP	2RP-5326
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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 Supervisor

Signature:  Date: _7/19/2019

email: ___ Kyle_Littrell@xtoenergy.com Telephone: _432-221-7331

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	2RP-5326
Facility ID	
Application ID	

Remediation Plan

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

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

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

- ☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☒ Extents of contamination must be fully delineated.
- ☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 7/19/2019

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

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

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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	NAB1913737942
District RP	2RP-5424
Facility ID	
Application ID	pAB1913737660

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)	NAB1913737942
Contact mailing address	522 W. Mermod, Carlsbad, NM 88220		

Location of Release Source

Latitude 32.243590° Longitude -103.886636°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Poker Lake Unit #318H	Site Type	Production Well Facility Flow Line
Date Release Discovered	4/25/2019	API# (if applicable)	30-015-39731

Unit Letter	Section	Township	Range	County
 K	4	24S	30E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls)	0.5	Volume Recovered (bbls)	0
☒ Produced Water	Volume Released (bbls)	6.2	Volume Recovered (bbls)	0
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?		☐ Yes ☐ No	
☐ Condensate	Volume Released (bbls)		Volume Recovered (bbls)	
☐ Natural Gas	Volume Released (Mcf)		Volume Recovered (Mcf)	
☐ Other (describe)	Volume/Weight Released (provide units)		Volume/Weight Recovered (provide units)	

Cause of Release

Fluids escaped from buried steel flow line through a hole developed from corrosion. Fluids were released to the pasture to the north and east of the coordinates. The line was clamped and is scheduled for repair. Additional third party resources have been retained to assist with remediation.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1913737942
District RP	2RP-5424
Facility ID	
Application ID	pAB1913737690

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

Initial Response

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

☒ The source of the release has been stopped.	
☒ The impacted area has been secured to protect human health and the environment.	
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <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.	
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Printed Name: Kyle Littrell	Title: SH&E Supervisor
Signature: 	Date: 5/3/2019
email: Kyle.Littrell@xtoenergy.com	Telephone: 432-221-7331
OCD Only	
Received by: 	Date: 5/17/2019

Incident ID	
District RP	2RP-5424
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

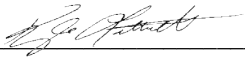
Characterization Report Checklist: <i>Each of the following items must be included in the report.</i> ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells. ☒ Field data ☒ Data table of soil contaminant concentration data ☒ Depth to water 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.

Incident ID	
District RP	2RP-5424
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Printed Name: ___ Kyle Littrell Title: ___ SH&E Supervisor

Signature:  Date: _7/18/2019

email: ___ Kyle_Littrell@xtoenergy.com Telephone: _432-221-7331

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	2RP-5424
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Remediation Plan

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

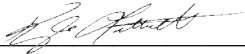
- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note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

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

- ☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☒ Extents of contamination must be fully delineated.
- ☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 7/18/2019

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

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

July 19, 2019

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

**RE: Deferral Request
Poker Lake Unit #320H Battery / #318H
Remediation Permit Number 2RP-5326 and 2RP-5424
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Deferral Request detailing soil sampling and excavation activities at the Poker Lake Unit #320H Battery / #318H (Site) in Units K and J, Section 4, Township 24 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impacts to soil following two separate events that caused the release of crude oil and produced water onto the caliche well pad and into the pasture area north of the well pad. Based on the excavation activities and results of the soil sampling events, XTO is submitting this Deferral Request, describing remediation that has occurred and requesting deferral of final remediation.

RELEASE BACKGROUND

On March 13, 2019, a valve on a rear circulating sump pump tank failed, which resulted in the release of 180 barrels (bbls) of crude oil in the northeast portion of the caliche well pad and into the pasture area to the north of the well pad. A vacuum truck was dispatched to the Site to recover free-standing fluid; approximately 160 bbls of crude oil 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 March 26, 2019, and was assigned Remediation Permit (RP) Number 2RP-5326 (Attachment 1).

On April 25, 2019, a second release occurred in the northwest area of the previous release extent, near the entrance to the caliche well pad. A buried steel flow line developed a hole due to corrosion, which resulted in the release of 0.5 bbls of crude oil and 6.2 bbls of produced water. No fluid was recovered. XTO reported the release to the NMOCD on a Form C-141 on May 3, 2019, and was assigned RP Number 2RP-5424. The initial Form C-141 misidentified the release location unit letter as H; the release location is in Unit K. The revised Form C-141 is included in Attachment 1.



SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is United States Geological Survey (USGS) well 321526103520101, located approximately 4,527 feet southwest of the Site. The water well has a depth to groundwater of 441 feet and a total depth of 567 feet. Ground surface elevation at the water well location is 3,446 feet above mean sea level (AMSL), which is approximately 21 feet higher in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is a seasonal streambed located approximately 5,236 feet southwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a low potential karst area.

CLOSURE CRITERIA

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

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

SITE ASSESSMENT, EXCAVATION, AND DELINEATION SOIL SAMPLING ACTIVITIES

On March 21, 2019, LTE personnel inspected the Site to evaluate the release extent. Surficial staining was observed on the northern edge of the caliche well pad and in the pasture area north of the well pad. LTE personnel collected five preliminary soil samples (SS01 through SS05) within the release extent from a depth of approximately 0.5 feet bgs to assess the lateral extent of soil impacts. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.

The preliminary soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC)





procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX following United States Environmental Protection Agency (USEPA) Method 8021B; TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0.

Based on visible surface staining and laboratory analytical results for preliminary soil samples SS01 through SS03 and SS05, excavation of impacted soil was required. Photographic documentation was conducted during the Site visit. Photographs are included in Attachment 2.

During May 2019, LTE personnel returned to the Site to oversee excavation of impacted soil as indicated by visible staining and laboratory analytical results for preliminary soil samples SS01 through SS03 and SS05. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Due to the presence of active pipelines in the release area, impacted soil was excavated in two separate areas. The southern excavation was completed in the northeast area of the well pad. The northern excavation was completed in the pasture area north of the well pad. Following removal of impacted soil to the extent possible, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples SW01 through SW14 were collected from the sidewalls of the excavation from depths ranging from ground surface to approximately 4 feet bgs. Composite soil samples FS01 through FS44 were collected from the floor of the excavation from depths ranging from 1 foot bgs to 4 feet bgs. The excavation soil samples were collected, handled and analyzed as described above and submitted to Xenco in Midland, Texas. The excavation extents and confirmation soil sample locations are depicted on Figure 3.

The southern excavation extent measured approximately 6,410 square feet in area, and the northern excavation extent measured approximately 3,480 square feet in area. A total of approximately 1,280 cubic yards of impacted soil were removed from the excavations. The impacted soil was transported and properly disposed of at the Lea Land landfill facility located in Hobbs, New Mexico.

On June 10, 2019, LTE personnel was at the Site to oversee assessment activities to further delineate the pasture release extent and determine if additional areas required excavation. Boreholes were advanced via hand auger at four locations in the pasture area north of the caliche well pad. Boreholes BH01 through BH03 were advanced in the pasture release area to a depth of 4 feet bgs and borehole BH04 was advanced immediately adjacent to the release extent adjacent to the active pipeline to a depth 6 feet bgs. Soil samples were collected from depths of 3 feet bgs and 4 feet bgs in boreholes BH01 through BH03 and from 6 feet bgs in borehole BH04. Soil from the four boreholes was field screened utilizing a PID and Hach® chloride QuanTab® test strips.





Field screening results and observations for each borehole were logged on lithologic/soil sampling logs, which are included in Attachment 3. The boreholes and delineation soil sample locations are depicted on Figure 4. The delineation soil samples were collected, handled and analyzed as described above and submitted to Xenco in Midland, Texas.

ANALYTICAL RESULTS

Laboratory analytical results indicated that BTEX, GRO/DRO, and TPH concentrations in preliminary soil samples SS01 through SS03 and SS05 exceeded the Closure Criteria. Impacted soil was excavated to the extent possible. Laboratory analytical results indicated that BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria in excavation soil samples SW01 through SW14, FS01 through FS08, and FS10 through FS44. Laboratory analytical results indicated that GRO/DRO and TPH concentrations in excavation floor sample FS09 exceeded the Closure Criteria.

Further excavation of impacted soil beyond excavation floor sample FS09 was limited by the presence of active production equipment and pipelines. XTO safety policy restricts soil disturbing activities to a 2 foot radius of any on-site production equipment and pipelines. This XTO safety policy is established to protect workers and reduce the likelihood of compromising the foundation of the production equipment or pipelines. This policy was enforced where impacted soil was identified within 2 feet of active production equipment or pipelines in soil sample FS09.

Laboratory analytical results for the delineation soil samples collected from boreholes BH01 through BH04 indicated that BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria and no further excavation was required in the pasture release area. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 4.

DEFERRAL REQUEST

A total of approximately 1,280 cubic yards of impacted soil were excavated from the Site; however, residual impacted soil was left in place for compliance with the XTO safety policy regarding earth moving activities within 2 feet of active production equipment and pipelines. Impacted soil was excavated to the extent possible, and laboratory analytical results for excavation floor sample FS09 collected from the final excavation extent indicated that soil with GRO/DRO and TPH concentrations exceeding the Closure Criteria was left in place within 2 feet of active production equipment or pipelines. The impacted soil remaining in place in this area is delineated vertically and laterally by excavation soil samples SW01 through SW03 and FS05 collected from the floor and sidewalls of the final excavation extent. An estimated 16 cubic yards of impacted soil remains in place, assuming a maximum 4 foot depth based on excavation soil samples SW01, SW02, and FS05 collected from depths of 0 to 4 feet or 4 feet bgs, that were compliant with the Closure Criteria.





XTO requests to backfill the existing excavations and complete remediation during any future major construction/alteration or final plugging and abandonment, whichever occurs first. LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. XTO requests deferral of final remediation for RP Numbers 2RP-5326 and 2RP-5424. Upon approval of this deferral request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. An updated NMOCD Form C-141 is included as Attachment 1.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Carol Ann Whaley
Staff Geologist

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Jim Amos, BLM
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD

Attachments:

Figure 1 Site Location Map
Figure 2 Preliminary Soil Sample Locations
Figure 3 Excavation Soil Sample Locations
Figure 4 Delineation Soil Sample Locations
Table 1 Soil Analytical Reports
Attachment 1 Initial/Final NMOCD Form C-141 (2RP-5326 and 2RP-5424)
Attachment 2 Photographic Log
Attachment 3 Lithologic/Soil Sample Logs
Attachment 4 Laboratory Analytical Reports



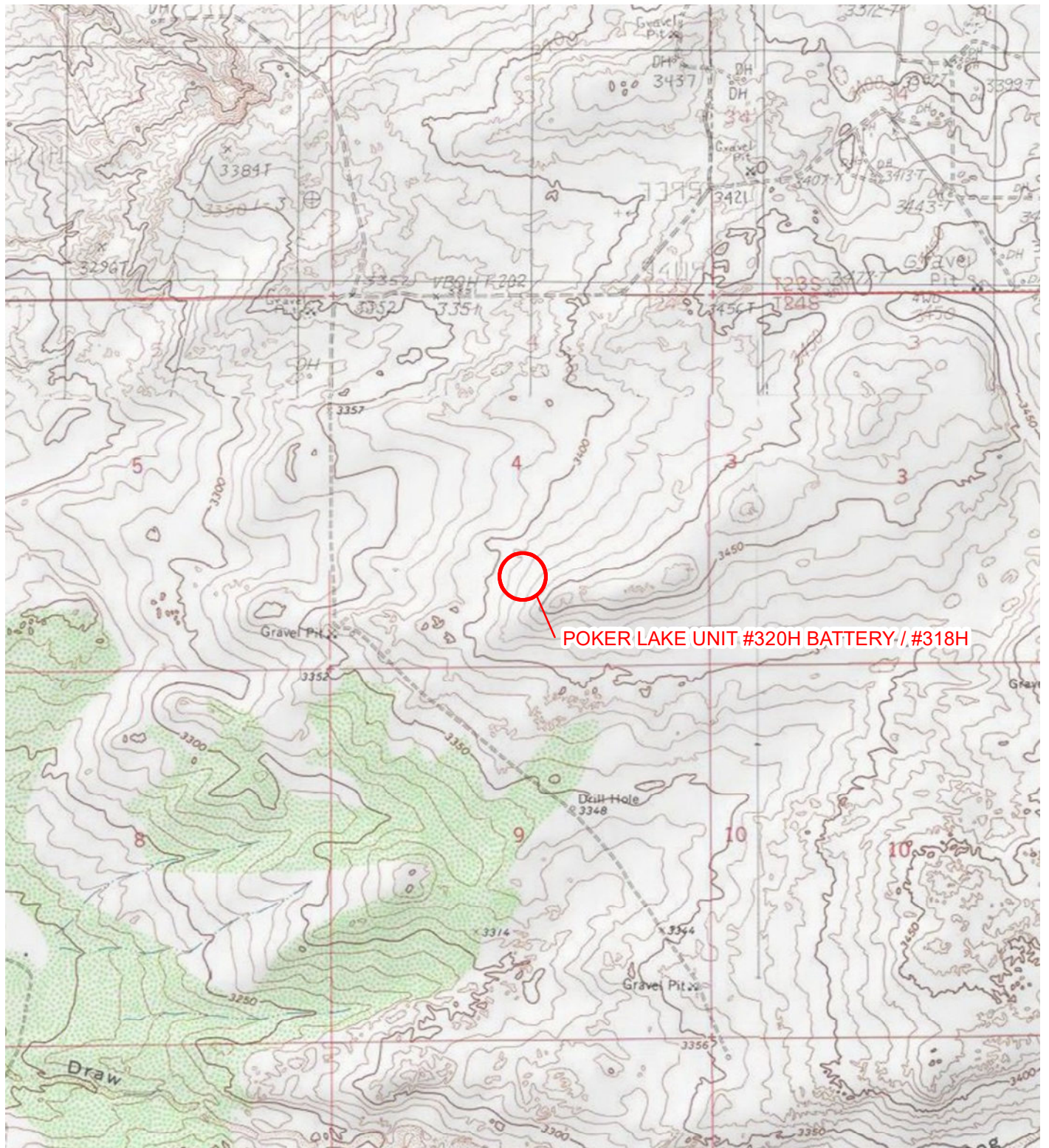
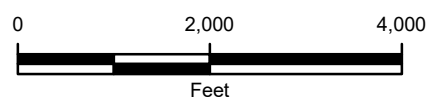


IMAGE COURTESY OF ESRI/USGS

LEGEND

 SITE LOCATION



NOTE: REMEDIATION PERMIT
NUMBER 2RP-5424 AND 2RP-5326

FIGURE 1
SITE LOCATION MAP
POKER LAKE UNIT #320H BATTERY / #318H
UNITS J AND K SEC 4 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 STANDARD

SS05@0.5'
 03/21/2019
 B: 2.58
 BTEX: **133**
 GRO+DRO: **14,000**
 TPH: **14,800**
 Cl: <5.00

SS04@0.5'
 03/21/2019
 B: 0.00459
 BTEX: 0.0621
 GRO+DRO: 278
 TPH: 329
 Cl: 6.99

SS02@0.5'
 03/21/2019
 B: <1.99
 BTEX: **164**
 GRO+DRO: **16,000**
 TPH: **16,800**
 Cl: 22.5

SS03@0.5'
 03/21/2019
 B: <2.00
 BTEX: **101**
 GRO+DRO: **16,000**
 TPH: **16,900**
 Cl: <24.8

SS01@0.5'
 03/21/2019
 B: 7.29
 BTEX: **208**
 GRO+DRO: **16,000**
 TPH: **17,100**
 Cl: 307

LEGEND

- ✕ RELEASE LOCATION 2RP-5424
- ✕ RELEASE LOCATION 2RP-5326
- PRELIMINARY SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS
- PRELIMINARY SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS
- UE— ELECTRIC LINE
- G— GAS LINE
- W— WATER LINE
- 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
 NOTE: REMEDIATION PERMIT NUMBER
 2RP-5326 AND 2RP-5424

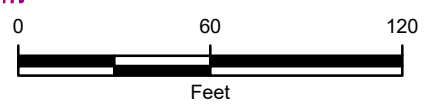


IMAGE COURTESY OF ESRI

FIGURE 2
 PRELIMINARY SOIL SAMPLE LOCATIONS
 POKER LAKE UNIT #320H BATTERY / #318H
 UNITS J AND K SEC 4 T24S R30E
 EDDY COUNTY, NEW MEXICO
 XTO ENERGY, INC.



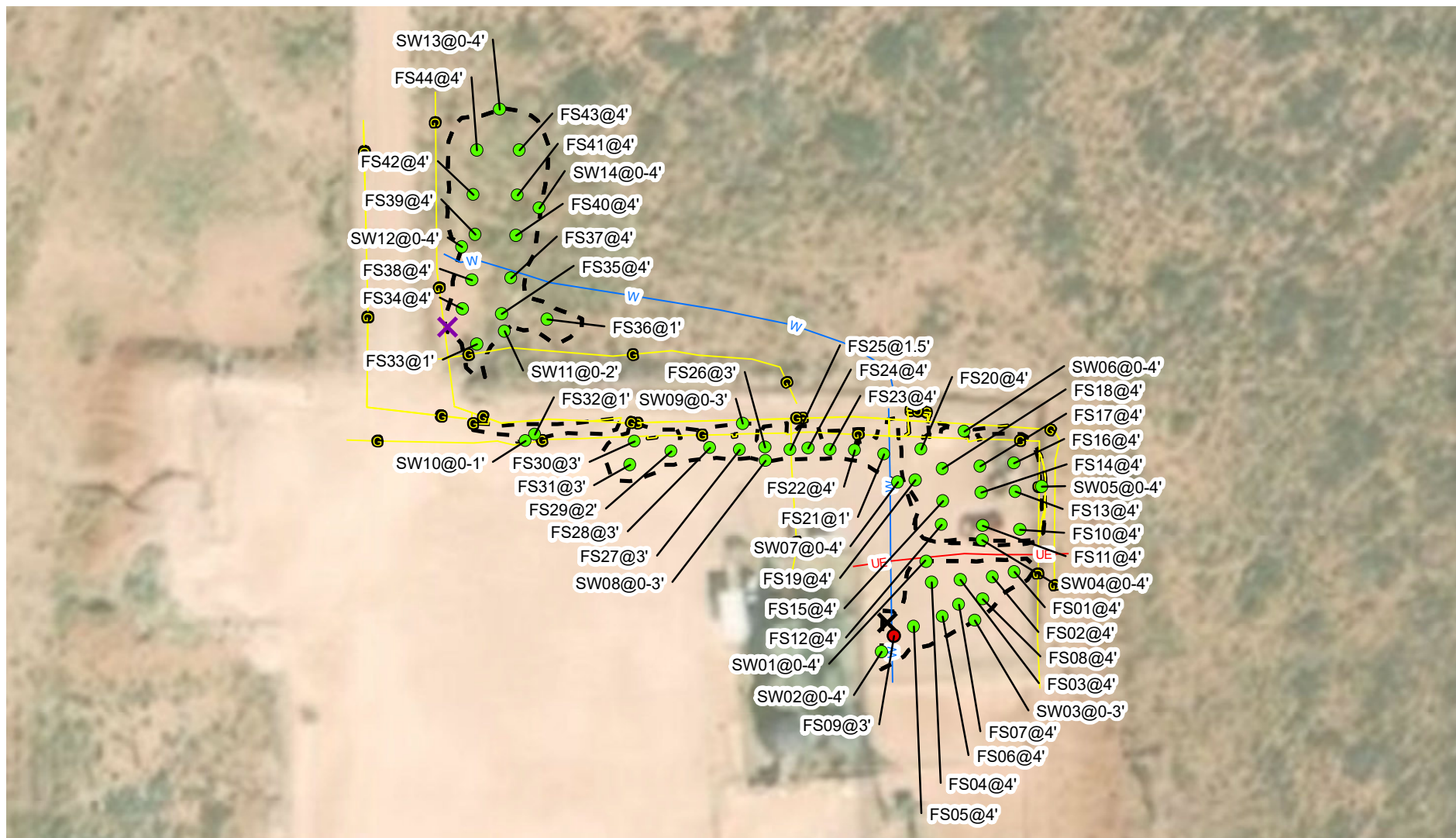


IMAGE COURTESY OF ESRI

LEGEND

✕ RELEASE LOCATION 2RP-5424

✕ RELEASE LOCATION 2RP-5326

● EXCAVATION SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS

● EXCAVATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)

NOTE: REMEDIATION PERMIT NUMBER 2RP-5424 AND 2RP-5326

—UE— ELECTRIC LINE

—G— GAS LINE

—W— WATER LINE

--- EXCAVATION EXTENT

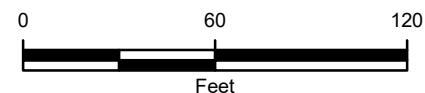


FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
POKER LAKE UNIT #320H BATTERY / #318H
UNITS J AND K SEC 4 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



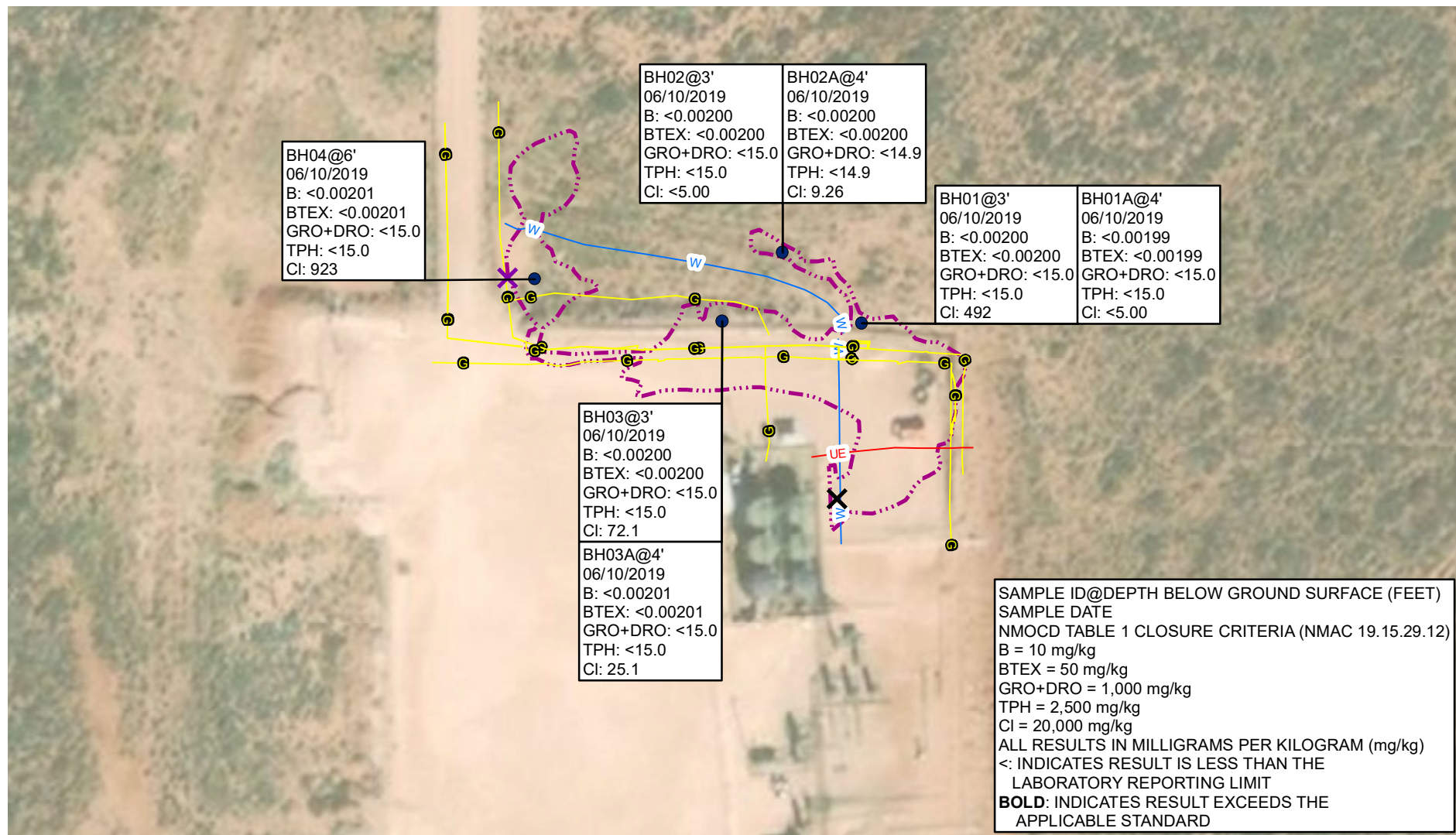
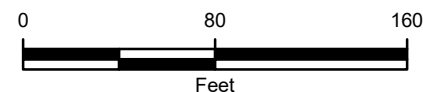


IMAGE COURTESY OF ESR

LEGEND

- RELEASE LOCATION 2RP-5424
- RELEASE LOCATION 2RP-5326
- BOREHOLE LOCATION
- ELECTRIC LINE
- GAS LINE
- WATER LINE
- RELEASE EXTENT



SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
 NOTE: REMEDIATION PERMIT NUMBER 2RP-5424 AND 2RP-5326

FIGURE 4
 DELINEATION SOIL SAMPLE LOCATIONS
 POKER LAKE UNIT #320H BATTERY / #318H
 UNITS J AND K SEC 4 T24S R30E
 EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



TABLE 1
SOIL ANALYTICAL RESULTS

POKER LAKE UNIT #320H BATTERY / #318H
REMEDATION PERMIT NUMBERS 2RP-5326 AND 2RP-5424
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS01	0.5	03/21/2019	7.29	62.3	25.3	113	208	6,990	9,260	805	16,000	17,100	307
SS02	0.5	03/21/2019	<1.99	35.2	22.6	106	164	5,670	10,300	794	16,000	16,800	22.5
SS03	0.5	03/21/2019	<2.00	18.9	13.3	68.3	101	4,870	11,100	897	16,000	16,900	<24.8
SS04	0.5	03/21/2019	0.00459	0.0274	0.00617	0.0240	0.0621	<15.0	278	50.8	278	329	6.99
SS05	0.5	03/21/2019	2.58	32.9	15.8	81.9	133	5,020	8,930	868	14,000	14,800	<5.00
FS01	4	05/28/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
FS02	4	05/28/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	8.83
FS03	4	05/28/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	15.4
FS04	4	05/28/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	26.4
FS05	4	05/28/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	13.9
FS06	4	05/28/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	10.0
FS07	4	05/28/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	12.6
FS08	4	05/28/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	10.7
FS09	3	05/28/2019	0.714	8.14	6.40	31.8	47.0	527	1,790	251	2,320	2,570	254
FS10	4	05/28/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	9.71
FS11	4	05/28/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	13.9
FS12	4	05/28/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	11.4
FS13	4	05/28/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	22.1
FS14	4	05/28/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	<5.04
FS15	4	05/28/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	10.3
FS16	4	05/28/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	31.6	<15.0	31.6	31.6	<4.98
FS17	4	05/28/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.96
FS18	4	05/28/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	6.30
FS19	4	05/29/2019	05/29/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	5.15
FS20	4	05/29/2019	05/29/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<4.96
FS21	1	05/29/2019	05/29/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	20.9	20.9	20.9	6.69



**TABLE 1
SOIL ANALYTICAL RESULTS**

**POKER LAKE UNIT #320H BATTERY / #318H
REMEDIATION PERMIT NUMBERS 2RP-5326 AND 2RP-5424
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)
FS22	4	05/29/2019	05/29/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	6.37
FS23	4	05/29/2019	05/29/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	7.39
FS24	4	05/29/2019	05/29/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	5.16
FS25	1.5	05/29/2019	05/29/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	58.6	58.6	58.6	17.4
FS26	3	05/29/2019	05/29/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	56.5
FS27	3	05/29/2019	05/29/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	31.3
FS28	3	05/29/2019	05/29/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	18.1
FS29	2	05/29/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	13.5
FS30	3	05/29/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	14.0
FS31	3	05/29/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	29.6
SW01	0 - 4	05/29/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	46.3
SW02	0 - 4	05/29/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	<14.9	13.0
SW03	0 - 3	05/29/2019	<0.00199	0.00251	0.00694	0.0627	0.0722	47.6	530	89.7	578	667	40.3
SW04	0 - 4	05/29/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	10.7
SW05	0 - 4	05/29/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	45.7
SW06	0 - 4	05/29/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	46.1	<15.0	46.1	46.1	<4.95
SW07	0 - 4	05/29/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	15.7
SW08	0 - 3	05/29/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	24.3	<15.0	24.3	24.3	29.1
SW09	0 - 3	05/29/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.96
SW10	0 - 1	05/30/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	31.8	<14.9	31.8	31.8	73.7
SW11	0 - 2	05/30/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	307
SW12	0 - 4	05/30/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	27.3	<15.0	27.3	27.3	394
SW13	0 - 4	05/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
SW14	0 - 4	05/30/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	<4.98
FS32	1	05/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	90.9
FS33	2	05/30/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	755



**TABLE 1
SOIL ANALYTICAL RESULTS**

**POKER LAKE UNIT #320H BATTERY / #318H
REMEDATION PERMIT NUMBERS 2RP-5326 AND 2RP-5424
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)
FS34	4	05/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	859
FS35	4	05/30/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	1,610
FS36	1	05/30/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
FS37	4	05/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	369
FS38	4	05/30/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	511
FS39	4	05/30/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	14.0
FS40	4	05/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.96
FS41	4	05/30/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	<4.98
FS42	4	05/30/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
FS43	4	05/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.04
FS44	4	05/30/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99
BH01	3	06/10/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	492
BH02	3	06/10/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
BH03	3	06/10/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	72.1
BH04	6	06/10/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	923
BH01A	4	06/10/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
BH02A	4	06/10/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	9.26
BH03A	4	06/10/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	25.1
NMOCB Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

ORO - motor oil range organics

NMAC - New Mexico Administrative Code

NMOCB - New Mexico Oil Conservation Division

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

NE - not established



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	NAB1909139455
District RP	2 2RP-5326
Facility ID	
Application ID	pAB1909139241

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) NAB1909139455
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.243313° Longitude -103.886070°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Poker Lake Unit #320H Battery	Site Type Bulk Storage and Separation Facility
Date Release Discovered 3/13/2019	API# (if applicable) 30-015-39810

Unit Letter	Section	Township	Range	County
J	4	24S	30E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 180	Volume Recovered (bbls) 160
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A release of oil was reported from a valve on a rear circulating pump sump tank. A vacuum truck recovered free standing fluids from the ground. Additional third party resources have been retained to assist with remediation.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1909139455
District RP	2 2RP-5326
Facility ID	
Application ID	pAB1909139241

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release of a volume of 25 barrels or more
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Notice provided by Bryan Foust to Mike Bratcher, Rob Hamlet, and Jim Griswold (NMOCD), Jim Amos, Crystal Weaver, and Deborah McKinney (BLM) on 3/13/2019 by email	

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <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> Signature:  email: <u>Kyle_Littrell@xtoenergy.com</u>	Title: <u>SH&E Supervisor</u> Date: <u>3/26/2019</u> Telephone: <u>432-221-7331</u>
OCD Only Received by:  Date: <u>4/1/2019</u>	

Incident ID	
District RP	2RP-5326
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

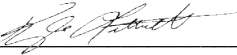
- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile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

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

Incident ID	
District RP	2RP-5326
Facility ID	
Application ID	

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

Printed Name: __ Kyle Littrell Title: __ SH&E Supervisor

Signature:  Date: _7/19/2019

email: __ Kyle_Littrell@xtoenergy.com Telephone: _432-221-7331

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	2RP-5326
Facility ID	
Application ID	

Remediation Plan

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

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

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

- ☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☒ Extents of contamination must be fully delineated.
- ☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 7/19/2019

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

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

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	NAB1913737942
District RP	2RP-5424
Facility ID	
Application ID	pAB1913737660

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)	NAB1913737942
Contact mailing address	522 W. Mermod, Carlsbad, NM 88220		

Location of Release Source

Latitude 32.243590° Longitude -103.886636°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Poker Lake Unit #318H	Site Type	Production Well Facility Flow Line
Date Release Discovered	4/25/2019	API# (if applicable)	30-015-39731

Unit Letter	Section	Township	Range	County
 K	4	24S	30E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls)	0.5	Volume Recovered (bbls)	0
☒ Produced Water	Volume Released (bbls)	6.2	Volume Recovered (bbls)	0
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?		☐ Yes ☐ No	
☐ Condensate	Volume Released (bbls)		Volume Recovered (bbls)	
☐ Natural Gas	Volume Released (Mcf)		Volume Recovered (Mcf)	
☐ Other (describe)	Volume/Weight Released (provide units)		Volume/Weight Recovered (provide units)	

Cause of Release

Fluids escaped from buried steel flow line through a hole developed from corrosion. Fluids were released to the pasture to the north and east of the coordinates. The line was clamped and is scheduled for repair. Additional third party resources have been retained to assist with remediation.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1913737942
District RP	2RP-5424
Facility ID	
Application ID	pAB1913737690

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

Initial Response

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

☒ The source of the release has been stopped.	
☒ The impacted area has been secured to protect human health and the environment.	
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <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: Kyle Littrell	Title: SH&E Supervisor
Signature: 	Date: 5/3/2019
email: Kyle.Littrell@xtoenergy.com	Telephone: 432-221-7331
OCD Only	
Received by: 	Date: 5/17/2019

Incident ID	
District RP	2RP-5424
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

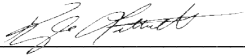
Characterization Report Checklist: <i>Each of the following items must be included in the report.</i> ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells. ☒ Field data ☒ Data table of soil contaminant concentration data ☒ Depth to water 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.

Incident ID	
District RP	2RP-5424
Facility ID	
Application ID	

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

Printed Name: ___ Kyle Littrell ___ Title: ___ SH&E Supervisor ___

Signature:  Date: ___ 7/18/2019 ___

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

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	2RP-5424
Facility ID	
Application ID	

Remediation Plan

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

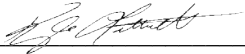
- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note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

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

- ☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☒ Extents of contamination must be fully delineated.
- ☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 7/18/2019

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

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____



Eastern view of the release area from the northern edge of the well pad during the site assessment.

Project: 012919048	XTO Energy, Inc. Poker Lake Unit #320H Battery / #318H	 <i>Advancing Opportunity</i>
March 21, 2019	Photographic Log	



Eastern view of the final excavation extent on the well pad during confirmation sampling activities.

Project: 012919048	XTO Energy, Inc. Poker Lake Unit #320H Battery / #318H	 <i>Advancing Opportunity</i>
May 30, 2019	Photographic Log	



Northern view of the final excavation extent from the pasture north of the well pad during confirmation sampling activities.

Project: 012919048	XTO Energy, Inc. Poker Lake Unit #320H Battery / #318H	 <i>Advancing Opportunity</i>
May 30, 2019	Photographic Log	



Northern view of the final excavation extent from the pasture north of the well pad during confirmation sampling activities.

Project: 012919048	XTO Energy, Inc. Poker Lake Unit #320H Battery / #318H	 <i>Advancing Opportunity</i>
May 30, 2019	Photographic Log	





LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier: BHO1

Date: 06/10/9

Project Name: PLU 320H

RP Number:

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: Robert M.

Method: Hand Auger

Lat/Long:

Field Screening:

Hole Diameter: 3"

Total Depth: 4'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<124	<5.0	N		0			
					1	1'	S	SP-SM Brown
dry	<124	<5.0	N		2	2'	S	SP-SM Brown
dry	<124	<5.0	N		3	3'	S	SP-SC reddish Brown
M	<124	<5.0	N		4	4'	S	SP-SC reddish Brown
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier: BH02

Date: 06/10/19

Project Name:
PLU 320 H

RP Number:

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: Robert M

Method: Hand Auger

Lat/Long:

Field Screening:

Hole Diameter: 3"

Total Depth: 4'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<124	<5.0	N		0			
					1	1'	S	SP-SM Brown
D	<124	<5.0	N		2	2'	S	SP-SM Brown
D	<124	<5.0	N		3	3'	S	SP-SC reddish Brown
M	<124	<5.0	N		4	4'	S	SP-SC reddish Brown
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

BH03

Date:

06/10/19

Project Name:

PLU 320 H

RP Number:

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: Robert M.

Method: Hand Auger

Lat/Long:

Field Screening:

Hole Diameter:

3"

Total Depth:

4'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
D	<124	<5.0	N		1	1'	S	SP-SM Brown
D	<124	<5.0	N		2	2'	S	SP-SM Brown
D	<124	<5.0	N		3	3'	S	SP-SC reddish Brown
M	<124	<5.0	N		4	4'	S	SP-SC reddish Brown
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier: B404

Date: 06/10/19

Project Name:
PLU 320H

RP Number:

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: Robert M

Method: Hand Auger

Lat/Long:

Field Screening:

Hole Diameter: 3"

Total Depth: 6'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			OPEN EXCAVATION
					1			
					2			
					3			
					4			
M	120	45.0	N		5		S	SP-SC reddish Brown
M	380	45.0	N		6		S	SP-SC reddish Brown
					7			
					8			
					9			
					10			
					11			
					12			



Analytical Report 618905

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 320 Battery

04-APR-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)



04-APR-19

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **618905**

PLU 320 Battery

Project Address: Delaware Basin

Adrian Baker:

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) 618905. 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. 618905 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,

Kalei Stout

Midland Laboratory Director

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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Sample Cross Reference 618905



LT Environmental, Inc., Arvada, CO

PLU 320 Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	03-21-19 08:40	.5 ft	618905-001
SS02	S	03-21-19 08:55	.5 ft	618905-002
SS03	S	03-21-19 09:10	.5 ft	618905-003
SS04	S	03-21-19 09:20	.5 ft	618905-004
SS05	S	03-21-19 09:35	.5 ft	618905-005



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 320 Battery*

Project ID:
Work Order Number(s): 618905

Report Date: 04-APR-19
Date Received: 03/26/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3084064 BTEX by EPA 8021B

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

Batch: LBA-3084266 BTEX by EPA 8021B

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



Certificate of Analysis Summary 618905

LT Environmental, Inc., Arvada, CO

Project Name: PLU 320 Battery



Project Id:

Contact: Adrian Baker

Project Location: Delaware Basin

Date Received in Lab: Tue Mar-26-19 11:30 am

Report Date: 04-APR-19

Project Manager: Kalei Stout

Analysis Requested	Lab Id:	618905-001		618905-002		618905-003		618905-004		618905-005		
	Field Id:	SS01		SS02		SS03		SS04		SS05		
	Depth:	.5- ft		.5- ft		.5- ft		.5- ft		.5- ft		
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		
	Sampled:	Mar-21-19 08:40		Mar-21-19 08:55		Mar-21-19 09:10		Mar-21-19 09:20		Mar-21-19 09:35		
BTEX by EPA 8021B	Extracted:	Apr-01-19 17:00		Apr-01-19 17:00		Apr-01-19 17:00		Mar-29-19 16:30		Apr-01-19 17:00		
	Analyzed:	Apr-02-19 13:29		Apr-02-19 13:48		Apr-02-19 14:07		Mar-30-19 13:37		Apr-02-19 14:26		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Benzene		7.29	2.01	<1.99	1.99	<2.00	2.00	0.00459	0.00201	2.58	2.00	
Toluene		62.3	2.01	35.2	1.99	18.9	2.00	0.0274	0.00201	32.9	2.00	
Ethylbenzene		25.3	2.01	22.6	1.99	13.3	2.00	0.00617	0.00201	15.8	2.00	
m,p-Xylenes		79.9	4.02	74.6	3.98	47.5	3.99	0.0150	0.00402	57.7	4.01	
o-Xylene		33.1	2.01	31.8	1.99	20.8	2.00	0.00897	0.00201	24.2	2.00	
Total Xylenes		113	2.01	106	1.99	68.3	2.00	0.0240	0.00201	81.9	2.00	
Total BTEX		208	2.01	164	1.99	101	2.00	0.0621	0.00201	133	2.00	
Inorganic Anions by EPA 300	Extracted:	Mar-27-19 16:15		Mar-28-19 09:00		Mar-28-19 09:00		Mar-28-19 09:00		Mar-28-19 09:00		
	Analyzed:	Mar-28-19 05:41		Mar-28-19 09:52		Mar-28-19 10:09		Mar-28-19 10:15		Mar-28-19 10:33		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Chloride		307	25.1	22.5	4.98	<24.8	24.8	6.99	4.99	<5.00	5.00	
TPH by SW8015 Mod	Extracted:	Mar-29-19 10:00		Mar-29-19 10:00		Mar-29-19 10:00		Mar-29-19 10:00		Mar-29-19 10:00		
	Analyzed:	Mar-30-19 07:30		Mar-30-19 07:49		Mar-30-19 08:08		Mar-30-19 05:24		Mar-30-19 08:27		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Gasoline Range Hydrocarbons (GRO)		6990	74.8	5670	74.9	4870	74.7	<15.0	15.0	5020	74.8	
Diesel Range Organics (DRO)		9260	74.8	10300	74.9	11100	74.7	278	15.0	8930	74.8	
Motor Oil Range Hydrocarbons (MRO)		805	74.8	794	74.9	897	74.7	50.8	15.0	868	74.8	
Total TPH		17100	74.8	16800	74.9	16900	74.7	329	15.0	14800	74.8	

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

Kalei Stout
Midland Laboratory Director



Certificate of Analytical Results 618905



LT Environmental, Inc., Arvada, CO

PLU 320 Battery

Sample Id: **SS01**
Lab Sample Id: 618905-001

Matrix: Soil
Date Collected: 03.21.19 08.40

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: SPC
Analyst: SPC
Seq Number: 3083709

Date Prep: 03.27.19 16.15

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	307	25.1	mg/kg	03.28.19 05.41		5

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3084047

Date Prep: 03.29.19 10.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	6990	74.8	mg/kg	03.30.19 07.30		5
Diesel Range Organics (DRO)	C10C28DRO	9260	74.8	mg/kg	03.30.19 07.30		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	805	74.8	mg/kg	03.30.19 07.30		5
Total TPH	PHC635	17100	74.8	mg/kg	03.30.19 07.30		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	94	%	70-135	03.30.19 07.30		
o-Terphenyl	84-15-1	107	%	70-135	03.30.19 07.30		



Certificate of Analytical Results 618905



LT Environmental, Inc., Arvada, CO

PLU 320 Battery

Sample Id: **SS01**
Lab Sample Id: 618905-001

Matrix: Soil
Date Collected: 03.21.19 08.40

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084266

Date Prep: 04.01.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	7.29	2.01	mg/kg	04.02.19 13.29		1000
Toluene	108-88-3	62.3	2.01	mg/kg	04.02.19 13.29		1000
Ethylbenzene	100-41-4	25.3	2.01	mg/kg	04.02.19 13.29		1000
m,p-Xylenes	179601-23-1	79.9	4.02	mg/kg	04.02.19 13.29		1000
o-Xylene	95-47-6	33.1	2.01	mg/kg	04.02.19 13.29		1000
Total Xylenes	1330-20-7	113	2.01	mg/kg	04.02.19 13.29		1000
Total BTEX		208	2.01	mg/kg	04.02.19 13.29		1000
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	04.02.19 13.29		
4-Bromofluorobenzene	460-00-4	120	%	70-130	04.02.19 13.29		



Certificate of Analytical Results 618905



LT Environmental, Inc., Arvada, CO

PLU 320 Battery

Sample Id: SS02
Lab Sample Id: 618905-002

Matrix: Soil
Date Collected: 03.21.19 08.55

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3083815

Date Prep: 03.28.19 09.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.5	4.98	mg/kg	03.28.19 09.52		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084047

Date Prep: 03.29.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	5670	74.9	mg/kg	03.30.19 07.49		5
Diesel Range Organics (DRO)	C10C28DRO	10300	74.9	mg/kg	03.30.19 07.49		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	794	74.9	mg/kg	03.30.19 07.49		5
Total TPH	PHC635	16800	74.9	mg/kg	03.30.19 07.49		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	03.30.19 07.49	
o-Terphenyl	84-15-1	112	%	70-135	03.30.19 07.49	



Certificate of Analytical Results 618905



LT Environmental, Inc., Arvada, CO

PLU 320 Battery

Sample Id: SS02
Lab Sample Id: 618905-002

Matrix: Soil
Date Collected: 03.21.19 08.55

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084266

Prep Method: SW5030B

% Moisture:

Date Prep: 04.01.19 17.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<1.99	1.99	mg/kg	04.02.19 13.48	U	1000
Toluene	108-88-3	35.2	1.99	mg/kg	04.02.19 13.48		1000
Ethylbenzene	100-41-4	22.6	1.99	mg/kg	04.02.19 13.48		1000
m,p-Xylenes	179601-23-1	74.6	3.98	mg/kg	04.02.19 13.48		1000
o-Xylene	95-47-6	31.8	1.99	mg/kg	04.02.19 13.48		1000
Total Xylenes	1330-20-7	106	1.99	mg/kg	04.02.19 13.48		1000
Total BTEX		164	1.99	mg/kg	04.02.19 13.48		1000
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	125		%	70-130	04.02.19 13.48	
1,4-Difluorobenzene	540-36-3	95		%	70-130	04.02.19 13.48	



Certificate of Analytical Results 618905



LT Environmental, Inc., Arvada, CO

PLU 320 Battery

Sample Id: SS03
Lab Sample Id: 618905-003

Matrix: Soil
Date Collected: 03.21.19 09.10

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: SPC
Analyst: SPC
Seq Number: 3083815

Date Prep: 03.28.19 09.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<24.8	24.8	mg/kg	03.28.19 10.09	U	5

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3084047

Date Prep: 03.29.19 10.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	4870	74.7	mg/kg	03.30.19 08.08		5
Diesel Range Organics (DRO)	C10C28DRO	11100	74.7	mg/kg	03.30.19 08.08		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	897	74.7	mg/kg	03.30.19 08.08		5
Total TPH	PHC635	16900	74.7	mg/kg	03.30.19 08.08		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	95	%	70-135	03.30.19 08.08		
o-Terphenyl	84-15-1	120	%	70-135	03.30.19 08.08		



Certificate of Analytical Results 618905



LT Environmental, Inc., Arvada, CO

PLU 320 Battery

Sample Id: SS03
Lab Sample Id: 618905-003

Matrix: Soil
Date Collected: 03.21.19 09.10

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084266

Date Prep: 04.01.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<2.00	2.00	mg/kg	04.02.19 14.07	U	1000
Toluene	108-88-3	18.9	2.00	mg/kg	04.02.19 14.07		1000
Ethylbenzene	100-41-4	13.3	2.00	mg/kg	04.02.19 14.07		1000
m,p-Xylenes	179601-23-1	47.5	3.99	mg/kg	04.02.19 14.07		1000
o-Xylene	95-47-6	20.8	2.00	mg/kg	04.02.19 14.07		1000
Total Xylenes	1330-20-7	68.3	2.00	mg/kg	04.02.19 14.07		1000
Total BTEX		101	2.00	mg/kg	04.02.19 14.07		1000
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	95		%	70-130	04.02.19 14.07	
4-Bromofluorobenzene	460-00-4	111		%	70-130	04.02.19 14.07	



Certificate of Analytical Results 618905



LT Environmental, Inc., Arvada, CO

PLU 320 Battery

Sample Id: **SS04**
Lab Sample Id: 618905-004

Matrix: Soil
Date Collected: 03.21.19 09.20

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3083815

Date Prep: 03.28.19 09.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.99	4.99	mg/kg	03.28.19 10.15		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084047

Date Prep: 03.29.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.30.19 05.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	278	15.0	mg/kg	03.30.19 05.24		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	50.8	15.0	mg/kg	03.30.19 05.24		1
Total TPH	PHC635	329	15.0	mg/kg	03.30.19 05.24		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	03.30.19 05.24	
o-Terphenyl	84-15-1	98	%	70-135	03.30.19 05.24	



Certificate of Analytical Results 618905



LT Environmental, Inc., Arvada, CO

PLU 320 Battery

Sample Id: **SS04**
Lab Sample Id: 618905-004

Matrix: Soil
Date Collected: 03.21.19 09.20

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084064

Date Prep: 03.29.19 16.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00459	0.00201	mg/kg	03.30.19 13.37		1
Toluene	108-88-3	0.0274	0.00201	mg/kg	03.30.19 13.37		1
Ethylbenzene	100-41-4	0.00617	0.00201	mg/kg	03.30.19 13.37		1
m,p-Xylenes	179601-23-1	0.0150	0.00402	mg/kg	03.30.19 13.37		1
o-Xylene	95-47-6	0.00897	0.00201	mg/kg	03.30.19 13.37		1
Total Xylenes	1330-20-7	0.0240	0.00201	mg/kg	03.30.19 13.37		1
Total BTEX		0.0621	0.00201	mg/kg	03.30.19 13.37		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	03.30.19 13.37		
4-Bromofluorobenzene	460-00-4	111	%	70-130	03.30.19 13.37		



Certificate of Analytical Results 618905



LT Environmental, Inc., Arvada, CO

PLU 320 Battery

Sample Id: SS05
Lab Sample Id: 618905-005

Matrix: Soil
Date Collected: 03.21.19 09.35

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: SPC
Analyst: SPC
Seq Number: 3083815

Date Prep: 03.28.19 09.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	03.28.19 10.33	U	1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3084047

Date Prep: 03.29.19 10.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	5020	74.8	mg/kg	03.30.19 08.27		5
Diesel Range Organics (DRO)	C10C28DRO	8930	74.8	mg/kg	03.30.19 08.27		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	868	74.8	mg/kg	03.30.19 08.27		5
Total TPH	PHC635	14800	74.8	mg/kg	03.30.19 08.27		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	95	%	70-135	03.30.19 08.27		
o-Terphenyl	84-15-1	109	%	70-135	03.30.19 08.27		



Certificate of Analytical Results 618905



LT Environmental, Inc., Arvada, CO

PLU 320 Battery

Sample Id: SS05
Lab Sample Id: 618905-005

Matrix: Soil
Date Collected: 03.21.19 09.35

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084266

Date Prep: 04.01.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	2.58	2.00	mg/kg	04.02.19 14.26		1000
Toluene	108-88-3	32.9	2.00	mg/kg	04.02.19 14.26		1000
Ethylbenzene	100-41-4	15.8	2.00	mg/kg	04.02.19 14.26		1000
m,p-Xylenes	179601-23-1	57.7	4.01	mg/kg	04.02.19 14.26		1000
o-Xylene	95-47-6	24.2	2.00	mg/kg	04.02.19 14.26		1000
Total Xylenes	1330-20-7	81.9	2.00	mg/kg	04.02.19 14.26		1000
Total BTEX		133	2.00	mg/kg	04.02.19 14.26		1000
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	120		%	70-130	04.02.19 14.26	
1,4-Difluorobenzene	540-36-3	95		%	70-130	04.02.19 14.26	

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 618905

LT Environmental, Inc.

PLU 320 Battery

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3083709

MB Sample Id: 7674516-1-BLK

Matrix: Solid

LCS Sample Id: 7674516-1-BKS

Prep Method: E300P

Date Prep: 03.27.19

LCSD Sample Id: 7674516-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	252	101	259	104	90-110	3	20	mg/kg	03.28.19 02:29	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3083815

MB Sample Id: 7674514-1-BLK

Matrix: Solid

LCS Sample Id: 7674514-1-BKS

Prep Method: E300P

Date Prep: 03.28.19

LCSD Sample Id: 7674514-1-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	243	97	244	98	90-110	0	20	mg/kg	03.28.19 09:41	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3083709

Parent Sample Id: 618897-007

Matrix: Soil

MS Sample Id: 618897-007 S

Prep Method: E300P

Date Prep: 03.27.19

MSD Sample Id: 618897-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	202	248	448	99	451	100	90-110	1	20	mg/kg	03.28.19 02:49	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3083709

Parent Sample Id: 618903-001

Matrix: Soil

MS Sample Id: 618903-001 S

Prep Method: E300P

Date Prep: 03.27.19

MSD Sample Id: 618903-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	204	250	454	100	472	107	90-110	4	20	mg/kg	03.28.19 04:22	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3083815

Parent Sample Id: 618905-002

Matrix: Soil

MS Sample Id: 618905-002 S

Prep Method: E300P

Date Prep: 03.28.19

MSD Sample Id: 618905-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	22.5	249	261	96	263	97	90-110	1	20	mg/kg	03.28.19 09:58	

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



QC Summary 618905

LT Environmental, Inc.

PLU 320 Battery

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3083815

Parent Sample Id: 618965-004

Matrix: Soil

MS Sample Id: 618965-004 S

Prep Method: E300P

Date Prep: 03.28.19

MSD Sample Id: 618965-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	16.8	252	261	97	259	96	90-110	1	20	mg/kg	03.28.19 11:30	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3084047

MB Sample Id: 7674698-1-BLK

Matrix: Solid

LCS Sample Id: 7674698-1-BKS

Prep Method: TX1005P

Date Prep: 03.29.19

LCSD Sample Id: 7674698-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	958	96	924	92	70-135	4	20	mg/kg	03.29.19 21:42	
Diesel Range Organics (DRO)	<8.13	1000	1050	105	1020	102	70-135	3	20	mg/kg	03.29.19 21:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		122		122		70-135	%	03.29.19 21:42
o-Terphenyl	97		117		104		70-135	%	03.29.19 21:42

Analytical Method: TPH by SW8015 Mod

Seq Number: 3084047

Parent Sample Id: 618899-001

Matrix: Soil

MS Sample Id: 618899-001 S

Prep Method: TX1005P

Date Prep: 03.29.19

MSD Sample Id: 618899-001 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)	8.95	998	972	96	969	96	70-135	0	20	mg/kg	03.29.19 22:39	
Diesel Range Organics (DRO)	<8.11	998	988	99	982	98	70-135	1	20	mg/kg	03.29.19 22:39	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		122		70-135	%	03.29.19 22:39
o-Terphenyl	100		99		70-135	%	03.29.19 22:39

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



QC Summary 618905

LT Environmental, Inc.

PLU 320 Battery

Analytical Method: BTEX by EPA 8021B

Seq Number: 3084064

MB Sample Id: 7674758-1-BLK

Matrix: Solid

LCS Sample Id: 7674758-1-BKS

Prep Method: SW5030B

Date Prep: 03.29.19

LCSD Sample Id: 7674758-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000384	0.0998	0.0927	93	0.0981	99	70-130	6	35	mg/kg	03.30.19 05:07	
Toluene	<0.000455	0.0998	0.0952	95	0.100	101	70-130	5	35	mg/kg	03.30.19 05:07	
Ethylbenzene	<0.000564	0.0998	0.0890	89	0.0935	94	70-130	5	35	mg/kg	03.30.19 05:07	
m,p-Xylenes	<0.00101	0.200	0.179	90	0.189	95	70-130	5	35	mg/kg	03.30.19 05:07	
o-Xylene	<0.000344	0.0998	0.0913	91	0.0977	98	70-130	7	35	mg/kg	03.30.19 05:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		98		99		70-130	%	03.30.19 05:07
4-Bromofluorobenzene	85		94		102		70-130	%	03.30.19 05:07

Analytical Method: BTEX by EPA 8021B

Seq Number: 3084266

MB Sample Id: 7674873-1-BLK

Matrix: Solid

LCS Sample Id: 7674873-1-BKS

Prep Method: SW5030B

Date Prep: 04.01.19

LCSD Sample Id: 7674873-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000388	0.101	0.0904	90	0.0889	89	70-130	2	35	mg/kg	04.02.19 22:40	
Toluene	<0.000459	0.101	0.0945	94	0.0924	93	70-130	2	35	mg/kg	04.02.19 22:40	
Ethylbenzene	<0.000569	0.101	0.0879	87	0.0855	86	70-130	3	35	mg/kg	04.02.19 22:40	
m,p-Xylenes	<0.00102	0.202	0.177	88	0.172	86	70-130	3	35	mg/kg	04.02.19 22:40	
o-Xylene	<0.000347	0.101	0.0906	90	0.0880	88	70-130	3	35	mg/kg	04.02.19 22:40	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		95		95		70-130	%	04.02.19 22:40
4-Bromofluorobenzene	85		89		92		70-130	%	04.02.19 22:40

Analytical Method: BTEX by EPA 8021B

Seq Number: 3084064

Parent Sample Id: 618899-001

Matrix: Soil

MS Sample Id: 618899-001 S

Prep Method: SW5030B

Date Prep: 03.29.19

MSD Sample Id: 618899-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000386	0.100	0.0929	93	0.0741	73	70-130	23	35	mg/kg	03.30.19 05:45	
Toluene	<0.000457	0.100	0.0958	96	0.0775	77	70-130	21	35	mg/kg	03.30.19 05:45	
Ethylbenzene	<0.000567	0.100	0.0896	90	0.0730	72	70-130	20	35	mg/kg	03.30.19 05:45	
m,p-Xylenes	<0.00102	0.201	0.180	90	0.148	74	70-130	20	35	mg/kg	03.30.19 05:45	
o-Xylene	<0.000346	0.100	0.0934	93	0.0782	77	70-130	18	35	mg/kg	03.30.19 05:45	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		102		70-130	%	03.30.19 05:45
4-Bromofluorobenzene	107		110		70-130	%	03.30.19 05:45

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



QC Summary 618905

LT Environmental, Inc.

PLU 320 Battery

Analytical Method: BTEX by EPA 8021B

Seq Number: 3084266

Parent Sample Id: 619029-001

Matrix: Soil

MS Sample Id: 619029-001 S

Prep Method: SW5030B

Date Prep: 04.01.19

MSD Sample Id: 619029-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000386	0.100	0.0605	61	0.0725	73	70-130	18	35	mg/kg	04.02.19 23:18	X
Toluene	<0.000457	0.100	0.0591	59	0.0705	71	70-130	18	35	mg/kg	04.02.19 23:18	X
Ethylbenzene	<0.000567	0.100	0.0530	53	0.0641	64	70-130	19	35	mg/kg	04.02.19 23:18	X
m,p-Xylenes	<0.00102	0.201	0.106	53	0.128	64	70-130	19	35	mg/kg	04.02.19 23:18	X
o-Xylene	<0.000346	0.100	0.0585	59	0.0687	69	70-130	16	35	mg/kg	04.02.19 23:18	X

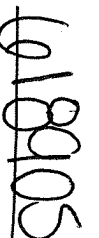
Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		97		70-130	%	04.02.19 23:18
4-Bromofluorobenzene	97		99		70-130	%	04.02.19 23:18

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



Page 1 of 1

Work Order Comments									
Program:	UST/ST	☐ RP	☐ Rowfields	☐ C	☐ Depthund	☐			
State of Project:									
Reporting Level:	Level II	☐	Level III	☐	ST/UST	☐	RP	☐	Vel IV
Deliverables:	EDD	☐	ADAPT	☐	Other:				

[illegible]

77479294 47600

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>[Signature]</i>	<i>[Signature]</i>	3/22/19-0700	2 <i>[Signature]</i>	<i>[Signature]</i>	3:20:19/1300
3			4		
5			6		

Analytical Report 626232

for
LT Environmental, Inc.

Project Manager: Ashley Ager

PLU 320H

16-JUL-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

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

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

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



16-JUL-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **626232**

PLU 320H

Project Address: Delaware Basin

Ashley Ager:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 626232. 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. 626232 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,

Kalei Stout

Midland Laboratory Director

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 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	05-28-19 13:55	4 ft	626232-001
FS02	S	05-28-19 14:05	4 ft	626232-002
FS03	S	05-28-19 14:20	4 ft	626232-003
FS04	S	05-28-19 14:30	4 ft	626232-004
FS05	S	05-28-19 14:35	4 ft	626232-005
FS06	S	05-28-19 14:40	4 ft	626232-006
FS07	S	05-28-19 14:45	4 ft	626232-007
FS08	S	05-28-19 14:50	4 ft	626232-008
FS09	S	05-28-19 14:55	3 ft	626232-009



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 320H*

Project ID:
Work Order Number(s): 626232

Report Date: 16-JUL-19
Date Received: 06/03/2019

Sample receipt non conformances and comments:

07/16/19: revised report to correct the sample depth for 626232-009.

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3091067 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 626232-009.

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



Certificate of Analysis Summary 626232

LT Environmental, Inc., Arvada, CO

Project Name: PLU 320H



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Mon Jun-03-19 07:35 am

Report Date: 16-JUL-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626232-001	626232-002	626232-003	626232-004	626232-005	626232-006
	Field Id:	FS01	FS02	FS03	FS04	FS05	FS06
	Depth:	4- ft	4- ft	4- ft	4- ft	4- ft	4- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	May-28-19 13:55	May-28-19 14:05	May-28-19 14:20	May-28-19 14:30	May-28-19 14:35	May-28-19 14:40
BTEX by EPA 8021B	Extracted:	Jun-03-19 12:00	Jun-03-19 12:00	Jun-03-19 12:00	Jun-03-19 12:00	Jun-03-19 12:00	Jun-03-19 12:00
	Analyzed:	Jun-04-19 06:38	Jun-04-19 06:57	Jun-04-19 07:16	Jun-04-19 08:32	Jun-04-19 08:51	Jun-04-19 09:10
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200
m,p-Xylenes		<0.00399 0.00399	<0.00403 0.00403	<0.00398 0.00398	<0.00397 0.00397	<0.00402 0.00402	<0.00399 0.00399
o-Xylene		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200
Chloride by EPA 300	Extracted:	Jun-03-19 14:30	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00
	Analyzed:	Jun-03-19 18:18	Jun-03-19 18:08	Jun-03-19 18:37	Jun-03-19 18:46	Jun-03-19 18:56	Jun-03-19 19:05
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.00 5.00	8.83 5.04	15.4 4.98	26.4 4.99	13.9 5.01	10.0 5.05
TPH by SW8015 Mod	Extracted:	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00
	Analyzed:	Jun-04-19 00:57	Jun-04-19 01:37	Jun-04-19 01:57	Jun-04-19 02:17	Jun-04-19 02:36	Jun-04-19 02:56
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

Kalei Stout
Midland Laboratory Director



Certificate of Analysis Summary 626232

LT Environmental, Inc., Arvada, CO

Project Name: PLU 320H



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Mon Jun-03-19 07:35 am

Report Date: 16-JUL-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626232-007	626232-008	626232-009			
	Field Id:	FS07	FS08	FS09			
	Depth:	4- ft	4- ft	3- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	May-28-19 14:45	May-28-19 14:50	May-28-19 14:55			
BTEX by EPA 8021B	Extracted:	Jun-03-19 12:00	Jun-03-19 12:00	Jun-03-19 12:00			
	Analyzed:	Jun-04-19 09:30	Jun-04-19 09:49	Jun-05-19 16:42			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00201 0.00201	<0.00200 0.00200	0.714 0.199			
Toluene		<0.00201 0.00201	<0.00200 0.00200	8.14 0.199			
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	6.40 0.199			
m,p-Xylenes		<0.00402 0.00402	<0.00401 0.00401	22.9 0.398			
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	8.88 0.199			
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	31.8 0.199			
Total BTEX		<0.00201 0.00201	<0.00200 0.00200	47.0 0.199			
Chloride by EPA 300	Extracted:	Jun-03-19 15:00	Jun-03-19 15:20	Jun-03-19 15:20			
	Analyzed:	Jun-03-19 19:34	Jun-04-19 03:23	Jun-04-19 03:32			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		12.6 5.05	10.7 5.02	254 4.99			
TPH by SW8015 Mod	Extracted:	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00			
	Analyzed:	Jun-04-19 03:15	Jun-04-19 03:35	Jun-04-19 03:54			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	527 15.0			
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	1790 15.0			
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	251 15.0			
Total TPH		<15.0 15.0	<15.0 15.0	2570 15.0			
Total GRO-DRO		<15.0 15.0	<15.0 15.0	2320 15.0			

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

Kalei Stout
Midland Laboratory Director



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS01**
Lab Sample Id: 626232-001

Matrix: Soil
Date Collected: 05.28.19 13.55

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091011

Date Prep: 06.03.19 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	06.03.19 18.18	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091046

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 00.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 00.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 00.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 00.57	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 00.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	06.04.19 00.57	
o-Terphenyl	84-15-1	93	%	70-135	06.04.19 00.57	



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS01**
Lab Sample Id: 626232-001

Matrix: Soil
Date Collected: 05.28.19 13.55

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.04.19 06.38	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.04.19 06.38	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.04.19 06.38	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.04.19 06.38	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.04.19 06.38	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.04.19 06.38	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.04.19 06.38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	06.04.19 06.38		
1,4-Difluorobenzene	540-36-3	103	%	70-130	06.04.19 06.38		



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS02**
Lab Sample Id: 626232-002

Matrix: Soil
Date Collected: 05.28.19 14.05

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091014

Date Prep: 06.03.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.83	5.04	mg/kg	06.03.19 18.08		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091046

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 01.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 01.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 01.37	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 01.37	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 01.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	06.04.19 01.37	
o-Terphenyl	84-15-1	96	%	70-135	06.04.19 01.37	



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS02**
Lab Sample Id: 626232-002

Matrix: Soil
Date Collected: 05.28.19 14.05

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.04.19 06.57	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.04.19 06.57	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.04.19 06.57	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	06.04.19 06.57	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.04.19 06.57	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.04.19 06.57	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.04.19 06.57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.04.19 06.57		
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.04.19 06.57		



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS03**
Lab Sample Id: 626232-003

Matrix: Soil
Date Collected: 05.28.19 14.20

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091014

Date Prep: 06.03.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.4	4.98	mg/kg	06.03.19 18.37		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091046

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 01.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 01.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 01.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 01.57	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 01.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	06.04.19 01.57	
o-Terphenyl	84-15-1	92	%	70-135	06.04.19 01.57	



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS03**
Lab Sample Id: 626232-003

Matrix: Soil
Date Collected: 05.28.19 14.20

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.04.19 07.16	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.04.19 07.16	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.04.19 07.16	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.04.19 07.16	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.04.19 07.16	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.04.19 07.16	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.04.19 07.16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.04.19 07.16		
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.04.19 07.16		



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS04**
Lab Sample Id: 626232-004

Matrix: Soil
Date Collected: 05.28.19 14.30

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091014

Date Prep: 06.03.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	26.4	4.99	mg/kg	06.03.19 18.46		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091046

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 02.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 02.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 02.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 02.17	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 02.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	06.04.19 02.17	
o-Terphenyl	84-15-1	91	%	70-135	06.04.19 02.17	



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS04**
Lab Sample Id: 626232-004

Matrix: Soil
Date Collected: 05.28.19 14.30

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

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	06.04.19 08.32	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.04.19 08.32	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.04.19 08.32	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.04.19 08.32	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.04.19 08.32	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.04.19 08.32	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.04.19 08.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.04.19 08.32		
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.04.19 08.32		



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS05**
Lab Sample Id: 626232-005

Matrix: Soil
Date Collected: 05.28.19 14.35

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091014

Date Prep: 06.03.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.9	5.01	mg/kg	06.03.19 18.56		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091046

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 02.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 02.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 02.36	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 02.36	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 02.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	06.04.19 02.36	
o-Terphenyl	84-15-1	94	%	70-135	06.04.19 02.36	



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS05**
Lab Sample Id: 626232-005

Matrix: Soil
Date Collected: 05.28.19 14.35

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.04.19 08.51	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.04.19 08.51	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.04.19 08.51	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.04.19 08.51	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.04.19 08.51	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.04.19 08.51	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.04.19 08.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	06.04.19 08.51		
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.04.19 08.51		



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS06**
Lab Sample Id: 626232-006

Matrix: Soil
Date Collected: 05.28.19 14.40

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091014

Date Prep: 06.03.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.0	5.05	mg/kg	06.03.19 19.05		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091046

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 02.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 02.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 02.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 02.56	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 02.56	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	95	%	70-135	06.04.19 02.56	
84-15-1	91	%	70-135	06.04.19 02.56	



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS06**
Lab Sample Id: 626232-006

Matrix: Soil
Date Collected: 05.28.19 14.40

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.04.19 09.10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.04.19 09.10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.04.19 09.10	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.04.19 09.10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.04.19 09.10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.04.19 09.10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.04.19 09.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.04.19 09.10		
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.04.19 09.10		



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS07**
Lab Sample Id: 626232-007

Matrix: Soil
Date Collected: 05.28.19 14.45

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091014

Date Prep: 06.03.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.6	5.05	mg/kg	06.03.19 19.34		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091046

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 03.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 03.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 03.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 03.15	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 03.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	06.04.19 03.15	
o-Terphenyl	84-15-1	95	%	70-135	06.04.19 03.15	



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS07**
Lab Sample Id: 626232-007

Matrix: Soil
Date Collected: 05.28.19 14.45

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.04.19 09.30	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.04.19 09.30	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.04.19 09.30	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.04.19 09.30	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.04.19 09.30	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.04.19 09.30	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.04.19 09.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.04.19 09.30		
4-Bromofluorobenzene	460-00-4	101	%	70-130	06.04.19 09.30		



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS08**
Lab Sample Id: 626232-008

Matrix: Soil
Date Collected: 05.28.19 14.50

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.7	5.02	mg/kg	06.04.19 03.23		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091046

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 03.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 03.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 03.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 03.35	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 03.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	06.04.19 03.35	
o-Terphenyl	84-15-1	95	%	70-135	06.04.19 03.35	



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS08**
Lab Sample Id: 626232-008

Matrix: Soil
Date Collected: 05.28.19 14.50

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.04.19 09.49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.04.19 09.49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.04.19 09.49	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.04.19 09.49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.04.19 09.49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.04.19 09.49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.04.19 09.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.04.19 09.49		
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.04.19 09.49		



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS09**
Lab Sample Id: 626232-009

Matrix: Soil
Date Collected: 05.28.19 14.55

Date Received: 06.03.19 07.35
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	254	4.99	mg/kg	06.04.19 03.32		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091046

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	527	15.0	mg/kg	06.04.19 03.54		1
Diesel Range Organics (DRO)	C10C28DRO	1790	15.0	mg/kg	06.04.19 03.54		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	251	15.0	mg/kg	06.04.19 03.54		1
Total TPH	PHC635	2570	15.0	mg/kg	06.04.19 03.54		1
Total GRO-DRO	PHC628	2320	15.0	mg/kg	06.04.19 03.54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	06.04.19 03.54	
o-Terphenyl	84-15-1	129	%	70-135	06.04.19 03.54	



Certificate of Analytical Results 626232



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS09**
Lab Sample Id: 626232-009

Matrix: Soil
Date Collected: 05.28.19 14.55

Date Received: 06.03.19 07.35
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.714	0.199	mg/kg	06.05.19 16.42		100
Toluene	108-88-3	8.14	0.199	mg/kg	06.05.19 16.42		100
Ethylbenzene	100-41-4	6.40	0.199	mg/kg	06.05.19 16.42		100
m,p-Xylenes	179601-23-1	22.9	0.398	mg/kg	06.05.19 16.42		100
o-Xylene	95-47-6	8.88	0.199	mg/kg	06.05.19 16.42		100
Total Xylenes	1330-20-7	31.8	0.199	mg/kg	06.05.19 16.42		100
Total BTEX		47.0	0.199	mg/kg	06.05.19 16.42		100
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	166	%	70-130	06.05.19 16.42	**	
1,4-Difluorobenzene	540-36-3	95	%	70-130	06.05.19 16.42		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



QC Summary 626232

LT Environmental, Inc.

PLU 320H

Analytical Method: Chloride by EPA 300

Seq Number: 3091011

MB Sample Id: 7679058-1-BLK

Matrix: Solid

LCS Sample Id: 7679058-1-BKS

Prep Method: E300P

Date Prep: 06.03.19

LCSD Sample Id: 7679058-1-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	235	94	234	94	90-110	0	20	mg/kg	06.03.19 15:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3091014

MB Sample Id: 7679073-1-BLK

Matrix: Solid

LCS Sample Id: 7679073-1-BKS

Prep Method: E300P

Date Prep: 06.03.19

LCSD Sample Id: 7679073-1-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	234	94	234	94	90-110	0	20	mg/kg	06.03.19 17:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3091018

MB Sample Id: 7679075-1-BLK

Matrix: Solid

LCS Sample Id: 7679075-1-BKS

Prep Method: E300P

Date Prep: 06.03.19

LCSD Sample Id: 7679075-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	239	96	239	96	90-110	0	20	mg/kg	06.03.19 23:05	

Analytical Method: Chloride by EPA 300

Seq Number: 3091011

Parent Sample Id: 626227-001

Matrix: Soil

MS Sample Id: 626227-001 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626227-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	322	253	575	100	571	98	90-110	1	20	mg/kg	06.03.19 16:04	

Analytical Method: Chloride by EPA 300

Seq Number: 3091011

Parent Sample Id: 626231-001

Matrix: Soil

MS Sample Id: 626231-001 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626231-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.71	250	270	104	267	103	90-110	1	20	mg/kg	06.03.19 17:16	

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



QC Summary 626232

LT Environmental, Inc. PLU 320H

Analytical Method: Chloride by EPA 300

Seq Number: 3091014

Parent Sample Id: 626232-002

Matrix: Soil

MS Sample Id: 626232-002 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626232-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8.83	252	268	103	268	103	90-110	0	20	mg/kg	06.03.19 18:17	

Analytical Method: Chloride by EPA 300

Seq Number: 3091014

Parent Sample Id: 626248-005

Matrix: Soil

MS Sample Id: 626248-005 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626248-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<1.04	302	308	102	310	102	90-110	1	20	mg/kg	06.03.19 20:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3091018

Parent Sample Id: 626234-003

Matrix: Soil

MS Sample Id: 626234-003 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626234-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.850	248	261	105	261	105	90-110	0	20	mg/kg	06.04.19 01:47	

Analytical Method: Chloride by EPA 300

Seq Number: 3091018

Parent Sample Id: 626272-001

Matrix: Soil

MS Sample Id: 626272-001 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626272-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	755	250	992	95	991	94	90-110	0	20	mg/kg	06.03.19 23:33	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091046

MB Sample Id: 7679158-1-BLK

Matrix: Solid

LCS Sample Id: 7679158-1-BKS

Prep Method: TX1005P

Date Prep: 06.03.19

LCSD Sample Id: 7679158-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1090	109	1080	108	70-135	1	20	mg/kg	06.03.19 20:33	
Diesel Range Organics (DRO)	<8.13	1000	1050	105	1020	102	70-135	3	20	mg/kg	06.03.19 20:33	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		128		126		70-135	%	06.03.19 20:33
o-Terphenyl	104		106		117		70-135	%	06.03.19 20:33

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



QC Summary 626232

LT Environmental, Inc.

PLU 320H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091046

Parent Sample Id: 626231-001

Matrix: Soil

MS Sample Id: 626231-001 S

Prep Method: TX1005P

Date Prep: 06.03.19

MSD Sample Id: 626231-001 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)	8.71	999	1100	109	1120	111	70-135	2	20	mg/kg	06.03.19 21:34	
Diesel Range Organics (DRO)	<8.12	999	1070	107	1090	109	70-135	2	20	mg/kg	06.03.19 21:34	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		126		70-135	%	06.03.19 21:34
o-Terphenyl	99		104		70-135	%	06.03.19 21:34

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091067

MB Sample Id: 7679178-1-BLK

Matrix: Solid

LCS Sample Id: 7679178-1-BKS

Prep Method: SW5030B

Date Prep: 06.03.19

LCSD Sample Id: 7679178-1-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	0.0984	98	0.0988	99	70-130	0	35	mg/kg	06.04.19 02:33	
Toluene	<0.000456	0.100	0.0938	94	0.0934	94	70-130	0	35	mg/kg	06.04.19 02:33	
Ethylbenzene	<0.000565	0.100	0.102	102	0.0995	100	70-130	2	35	mg/kg	06.04.19 02:33	
m,p-Xylenes	<0.00101	0.200	0.207	104	0.202	101	70-130	2	35	mg/kg	06.04.19 02:33	
o-Xylene	<0.000344	0.100	0.101	101	0.102	102	70-130	1	35	mg/kg	06.04.19 02:33	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		99		102		70-130	%	06.04.19 02:33
4-Bromofluorobenzene	81		96		103		70-130	%	06.04.19 02:33

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091067

Parent Sample Id: 626231-003

Matrix: Soil

MS Sample Id: 626231-003 S

Prep Method: SW5030B

Date Prep: 06.03.19

MSD Sample Id: 626231-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000474	0.0996	0.0955	95	0.0949	94	70-130	1	35	mg/kg	06.04.19 03:11	
Toluene	<0.000454	0.0996	0.0906	91	0.0900	90	70-130	1	35	mg/kg	06.04.19 03:11	
Ethylbenzene	<0.000563	0.0996	0.0978	98	0.0971	97	70-130	1	35	mg/kg	06.04.19 03:11	
m,p-Xylenes	<0.00101	0.199	0.198	99	0.196	98	70-130	1	35	mg/kg	06.04.19 03:11	
o-Xylene	0.000343	0.0996	0.0980	98	0.0973	97	70-130	1	35	mg/kg	06.04.19 03:11	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		102		70-130	%	06.04.19 03:11
4-Bromofluorobenzene	103		104		70-130	%	06.04.19 03:11

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

Work Order No: 1040232

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296

Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

www.xenco.com Page 1 of 1

Project Manager:	Ashley Ager	Bill to: (if different)	Kyle Little
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO-Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432.704.5178	Email:	ager@ltenv.com mcafee@ltenv.com
Project Name:	PLU 320H	Turn Around	
Project Number:		Route	☐
P.O. Number:	28P-5326	Rush:	24hr
Sampler's Name:	Robert McAfee	Due Date:	
ANALYSIS REQUEST			
Program: ☐ UST/PRST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐			
State of Project:			
Reporting Level: ☐ I ☐ II ☐ III ☐ ST/UST ☐ RRP ☐ Level IV ☐			
Deliverables: EDD ☐ ADAPT ☐ Other:			

Project Name:	PLU 320H	Turn Around	
Project Number:		Route	☐
P.O. Number:	28P-5326	Rush:	24hr
Sampler's Name:	Robert McAfee	Due Date:	
SAMPLE RECEIPT			
Temperature (°C):	0510.3	Temp Blank:	Yes ☒ No ☐
Received intact:	Yes ☒ No ☐	Thermometer:	Yes ☒ No ☐
Cooler Custody Seals:	Yes ☒ No ☐	Correction Factor:	-0.2
Sample Custody Seals:	Yes ☒ No ☐	Total Containers:	
Sample Identification			
Sample ID	Matrix	Date Sampled	Time Sampled
FS01	S	05/28/19	1355
FS02			1405
FS03			1420
FS04			1430
FS05			1435
FS06			1440
FS07			1445
FS08			1450
FS09			1455

Number of Containers				ANALYSIS REQUEST																Work Order Notes	
				TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)															
FS01	S	05/28/19	1355	4'	X	X	X														
FS02			1405	4'	X	X	X														
FS03			1420	4'	X	X	X														
FS04			1430	4'	X	X	X														
FS05			1435	4'	X	X	X														
FS06			1440	4'	X	X	X														
FS07			1445	4'	X	X	X														
FS08			1450	4'	X	X	X														
FS09			1455	4'	X	X	X														

Total 200.7 / 60.10 200.8 / 60.20: 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 60.10: 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
		05-31-19 10:10			

ORIGIN ID: CACA (281) 240-4200
 SAMPLE CUSTODY
 SAMPLE CUSTODY
 1089 N CANAL ST
 CARLSBAD, NM 88220
 UNITED STATES US

SHIP DATE: 31MAY19
 ACTWGT: 48.00 LB
 CAD: 114488676INET4100
 DIMS: 24x13x13 IN

BILL SENDER

TO SAMPLE RECEIVING MIDLAND

FEDEx OFFICE PRINT & SHIP CENTER
 FEDEX OFFICE PRINT & SHIP CENTER
 200 W INTERSTATE 20

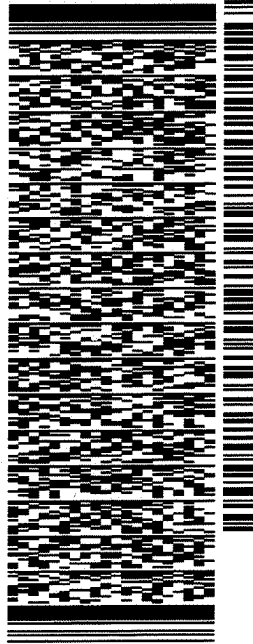
MIDLAND TX 79701

(432) 704-5440

REF:

INV:

DEPT:



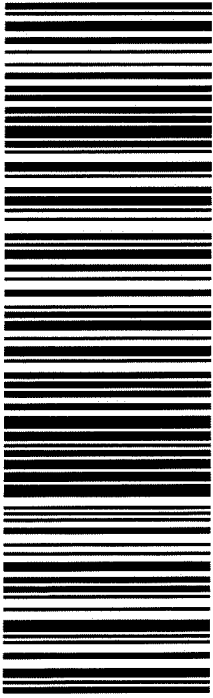
J151019010701ur

TRK# 7753 6207 1739
 0201

SATURDAY HOLD
 PRIORITY OVERNIGHT

41 MAFA

HLD
 MAFKI
 LBB
 TX-US



5.5/5.1

565J1/D66C/23AD

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/03/2019 07:35:00 AM

Work Order #: 626232

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/03/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/03/2019

Analytical Report 626231

for
LT Environmental, Inc.

Project Manager: Ashley Ager

PLU 320H

04-JUN-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

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

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

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



04-JUN-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **626231**

PLU 320H

Project Address: Delaware Basin

Ashley Ager:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 626231. 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. 626231 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

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 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS10	S	05-28-19 15:10	4 ft	626231-001
FS11	S	05-28-19 15:15	4 ft	626231-002
FS12	S	05-28-19 15:20	4 ft	626231-003
FS13	S	05-28-19 15:30	4 ft	626231-004
FS14	S	05-28-19 15:35	4 ft	626231-005
FS15	S	05-28-19 16:00	4 ft	626231-006
FS16	S	05-28-19 16:05	4 ft	626231-007
FS17	S	05-28-19 16:10	4 ft	626231-008
FS18	S	05-28-19 16:15	4 ft	626231-009



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 320H*

Project ID:
Work Order Number(s): 626231

Report Date: 04-JUN-19
Date Received: 06/03/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3091063 BTEX by EPA 8021B

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

Batch: LBA-3091067 BTEX by EPA 8021B

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



Certificate of Analysis Summary 626231

LT Environmental, Inc., Arvada, CO

Project Name: PLU 320H



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Mon Jun-03-19 07:35 am

Report Date: 04-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626231-001	626231-002	626231-003	626231-004	626231-005	626231-006
	Field Id:	FS10	FS11	FS12	FS13	FS14	FS15
	Depth:	4- ft	4- ft	4- ft	4- ft	4- ft	4- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	May-28-19 15:10	May-28-19 15:15	May-28-19 15:20	May-28-19 15:30	May-28-19 15:35	May-28-19 16:00
BTEX by EPA 8021B	Extracted:	Jun-03-19 11:00	Jun-03-19 11:00	Jun-03-19 12:00	Jun-03-19 12:00	Jun-03-19 12:00	Jun-03-19 12:00
	Analyzed:	Jun-04-19 01:18	Jun-04-19 01:37	Jun-04-19 04:25	Jun-04-19 04:44	Jun-04-19 05:03	Jun-04-19 05:22
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201
m,p-Xylenes		<0.00401 0.00401	<0.00403 0.00403	<0.00403 0.00403	<0.00402 0.00402	<0.00397 0.00397	<0.00402 0.00402
o-Xylene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201
Total Xylenes		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201
Total BTEX		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201
Chloride by EPA 300	Extracted:	Jun-03-19 14:30	Jun-03-19 14:30	Jun-03-19 14:30	Jun-03-19 14:30	Jun-03-19 14:30	Jun-03-19 14:30
	Analyzed:	Jun-03-19 17:11	Jun-03-19 17:27	Jun-03-19 17:32	Jun-03-19 17:47	Jun-03-19 17:52	Jun-03-19 17:58
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		9.71 4.99	13.9 4.99	11.4 4.99	22.1 5.00	<5.04 5.04	10.3 5.00
TPH by SW8015 Mod	Extracted:	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00
	Analyzed:	Jun-03-19 21:14	Jun-03-19 22:15	Jun-03-19 22:35	Jun-03-19 22:56	Jun-03-19 23:16	Jun-03-19 23:36
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 626231

LT Environmental, Inc., Arvada, CO

Project Name: PLU 320H



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Mon Jun-03-19 07:35 am

Report Date: 04-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626231-007	626231-008	626231-009			
	Field Id:	FS16	FS17	FS18			
	Depth:	4- ft	4- ft	4- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	May-28-19 16:05	May-28-19 16:10	May-28-19 16:15			
BTEX by EPA 8021B	Extracted:	Jun-03-19 12:00	Jun-03-19 12:00	Jun-03-19 12:00			
	Analyzed:	Jun-04-19 05:41	Jun-04-19 06:00	Jun-04-19 06:19			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200			
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200			
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200			
m,p-Xylenes		<0.00398 0.00398	<0.00400 0.00400	<0.00401 0.00401			
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200			
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200			
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200			
Chloride by EPA 300	Extracted:	Jun-03-19 14:30	Jun-03-19 14:30	Jun-03-19 14:30			
	Analyzed:	Jun-03-19 18:03	Jun-03-19 18:08	Jun-03-19 18:13			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		<4.98 4.98	<4.96 4.96	6.30 5.00			
TPH by SW8015 Mod	Extracted:	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00			
	Analyzed:	Jun-03-19 23:56	Jun-04-19 00:17	Jun-04-19 00:37			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Diesel Range Organics (DRO)		31.6 15.0	<15.0 15.0	<15.0 15.0			
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Total TPH		31.6 15.0	<15.0 15.0	<15.0 15.0			
Total GRO-DRO		31.6 15.0	<15.0 15.0	<15.0 15.0			

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS10**
Lab Sample Id: 626231-001

Matrix: Soil
Date Collected: 05.28.19 15.10

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091011

Date Prep: 06.03.19 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.71	4.99	mg/kg	06.03.19 17.11		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091046

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.03.19 21.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.03.19 21.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.03.19 21.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.03.19 21.14	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.03.19 21.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	06.03.19 21.14	
o-Terphenyl	84-15-1	95	%	70-135	06.03.19 21.14	



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS10**
Lab Sample Id: 626231-001

Matrix: Soil
Date Collected: 05.28.19 15.10

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Date Prep: 06.03.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.04.19 01.18	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.04.19 01.18	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.04.19 01.18	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.04.19 01.18	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.04.19 01.18	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.04.19 01.18	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.04.19 01.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	06.04.19 01.18		
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.04.19 01.18		



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS11**
Lab Sample Id: 626231-002

Matrix: Soil
Date Collected: 05.28.19 15.15

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091011

Date Prep: 06.03.19 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.9	4.99	mg/kg	06.03.19 17.27		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091046

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.03.19 22.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.03.19 22.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.03.19 22.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.03.19 22.15	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.03.19 22.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	06.03.19 22.15	
o-Terphenyl	84-15-1	95	%	70-135	06.03.19 22.15	



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS11**
Lab Sample Id: 626231-002

Matrix: Soil
Date Collected: 05.28.19 15.15

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Prep Method: SW5030B

% Moisture:

Date Prep: 06.03.19 11.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.04.19 01.37	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.04.19 01.37	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.04.19 01.37	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	06.04.19 01.37	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.04.19 01.37	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.04.19 01.37	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.04.19 01.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.04.19 01.37		
4-Bromofluorobenzene	460-00-4	102	%	70-130	06.04.19 01.37		



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: FS12
Lab Sample Id: 626231-003

Matrix: Soil
Date Collected: 05.28.19 15.20

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091011

Date Prep: 06.03.19 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.4	4.99	mg/kg	06.03.19 17.32		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091046

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.03.19 22.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.03.19 22.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.03.19 22.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.03.19 22.35	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.03.19 22.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	06.03.19 22.35	
o-Terphenyl	84-15-1	90	%	70-135	06.03.19 22.35	



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS12**
Lab Sample Id: 626231-003

Matrix: Soil
Date Collected: 05.28.19 15.20

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.04.19 04.25	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.04.19 04.25	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.04.19 04.25	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	06.04.19 04.25	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.04.19 04.25	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.04.19 04.25	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.04.19 04.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	06.04.19 04.25		
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.04.19 04.25		



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS13**
Lab Sample Id: 626231-004

Matrix: Soil
Date Collected: 05.28.19 15.30

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091011

Date Prep: 06.03.19 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.1	5.00	mg/kg	06.03.19 17.47		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091046

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.03.19 22.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.03.19 22.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.03.19 22.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.03.19 22.56	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.03.19 22.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	06.03.19 22.56	
o-Terphenyl	84-15-1	93	%	70-135	06.03.19 22.56	



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS13**
Lab Sample Id: 626231-004

Matrix: Soil
Date Collected: 05.28.19 15.30

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.04.19 04.44	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.04.19 04.44	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.04.19 04.44	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.04.19 04.44	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.04.19 04.44	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.04.19 04.44	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.04.19 04.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.04.19 04.44		
4-Bromofluorobenzene	460-00-4	92	%	70-130	06.04.19 04.44		



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS14**
Lab Sample Id: 626231-005

Matrix: Soil
Date Collected: 05.28.19 15.35

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091011

Date Prep: 06.03.19 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.04	5.04	mg/kg	06.03.19 17.52	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091046

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.03.19 23.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.03.19 23.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.03.19 23.16	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.03.19 23.16	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.03.19 23.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	06.03.19 23.16	
o-Terphenyl	84-15-1	92	%	70-135	06.03.19 23.16	



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS14**
Lab Sample Id: 626231-005

Matrix: Soil
Date Collected: 05.28.19 15.35

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

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	06.04.19 05.03	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.04.19 05.03	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.04.19 05.03	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.04.19 05.03	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.04.19 05.03	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.04.19 05.03	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.04.19 05.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	06.04.19 05.03		
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.04.19 05.03		



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: FS15
Lab Sample Id: 626231-006

Matrix: Soil
Date Collected: 05.28.19 16.00

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091011

Date Prep: 06.03.19 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.3	5.00	mg/kg	06.03.19 17.58		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091046

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.03.19 23.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.03.19 23.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.03.19 23.36	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.03.19 23.36	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.03.19 23.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	06.03.19 23.36	
o-Terphenyl	84-15-1	92	%	70-135	06.03.19 23.36	



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS15**
Lab Sample Id: 626231-006

Matrix: Soil
Date Collected: 05.28.19 16.00

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.04.19 05.22	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.04.19 05.22	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.04.19 05.22	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.04.19 05.22	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.04.19 05.22	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.04.19 05.22	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.04.19 05.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.04.19 05.22		
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.04.19 05.22		



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS16**
Lab Sample Id: 626231-007

Matrix: Soil
Date Collected: 05.28.19 16.05

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091011

Date Prep: 06.03.19 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	06.03.19 18.03	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091046

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.03.19 23.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	31.6	15.0	mg/kg	06.03.19 23.56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.03.19 23.56	U	1
Total TPH	PHC635	31.6	15.0	mg/kg	06.03.19 23.56		1
Total GRO-DRO	PHC628	31.6	15.0	mg/kg	06.03.19 23.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	06.03.19 23.56	
o-Terphenyl	84-15-1	94	%	70-135	06.03.19 23.56	



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS16**
Lab Sample Id: 626231-007

Matrix: Soil
Date Collected: 05.28.19 16.05

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.04.19 05.41	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.04.19 05.41	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.04.19 05.41	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.04.19 05.41	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.04.19 05.41	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.04.19 05.41	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.04.19 05.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.04.19 05.41		
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.04.19 05.41		



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS17** Matrix: Soil Date Received: 06.03.19 07.35
Lab Sample Id: 626231-008 Date Collected: 05.28.19 16.10 Sample Depth: 4 ft
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 06.03.19 14.30 Basis: Wet Weight
Seq Number: 3091011

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	06.03.19 18.08	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 06.03.19 15.00 Basis: Wet Weight
Seq Number: 3091046

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 00.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 00.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 00.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 00.17	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 00.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	06.04.19 00.17	
o-Terphenyl	84-15-1	95	%	70-135	06.04.19 00.17	



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS17**
Lab Sample Id: 626231-008

Matrix: Soil
Date Collected: 05.28.19 16.10

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.03.19 12.00

Basis: Wet Weight

Seq Number: 3091067

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.04.19 06.00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.04.19 06.00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.04.19 06.00	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.04.19 06.00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.04.19 06.00	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.04.19 06.00	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.04.19 06.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	06.04.19 06.00		
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.04.19 06.00		



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS18**
Lab Sample Id: 626231-009

Matrix: Soil
Date Collected: 05.28.19 16.15

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091011

Date Prep: 06.03.19 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.30	5.00	mg/kg	06.03.19 18.13		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091046

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 00.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 00.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 00.37	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 00.37	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 00.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	06.04.19 00.37	
o-Terphenyl	84-15-1	97	%	70-135	06.04.19 00.37	



Certificate of Analytical Results 626231



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS18**
Lab Sample Id: 626231-009

Matrix: Soil
Date Collected: 05.28.19 16.15

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.04.19 06.19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.04.19 06.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.04.19 06.19	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.04.19 06.19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.04.19 06.19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.04.19 06.19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.04.19 06.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	06.04.19 06.19		
4-Bromofluorobenzene	460-00-4	107	%	70-130	06.04.19 06.19		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 626231

LT Environmental, Inc.

PLU 320H

Analytical Method: Chloride by EPA 300

Seq Number: 3091011

MB Sample Id: 7679058-1-BLK

Matrix: Solid

LCS Sample Id: 7679058-1-BKS

Prep Method: E300P

Date Prep: 06.03.19

LCSD Sample Id: 7679058-1-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	235	94	234	94	90-110	0	20	mg/kg	06.03.19 15:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3091011

Parent Sample Id: 626227-001

Matrix: Soil

MS Sample Id: 626227-001 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626227-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	322	253	575	100	571	98	90-110	1	20	mg/kg	06.03.19 16:04	

Analytical Method: Chloride by EPA 300

Seq Number: 3091011

Parent Sample Id: 626231-001

Matrix: Soil

MS Sample Id: 626231-001 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626231-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.71	250	270	104	267	103	90-110	1	20	mg/kg	06.03.19 17:16	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091046

MB Sample Id: 7679158-1-BLK

Matrix: Solid

LCS Sample Id: 7679158-1-BKS

Prep Method: TX1005P

Date Prep: 06.03.19

LCSD Sample Id: 7679158-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1090	109	1080	108	70-135	1	20	mg/kg	06.03.19 20:33	
Diesel Range Organics (DRO)	<8.13	1000	1050	105	1020	102	70-135	3	20	mg/kg	06.03.19 20:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		128		126		70-135	%	06.03.19 20:33
o-Terphenyl	104		106		117		70-135	%	06.03.19 20:33

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

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

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

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



QC Summary 626231

LT Environmental, Inc.

PLU 320H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091046

Parent Sample Id: 626231-001

Matrix: Soil

MS Sample Id: 626231-001 S

Prep Method: TX1005P

Date Prep: 06.03.19

MSD Sample Id: 626231-001 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)	8.71	999	1100	109	1120	111	70-135	2	20	mg/kg	06.03.19 21:34	
Diesel Range Organics (DRO)	<8.12	999	1070	107	1090	109	70-135	2	20	mg/kg	06.03.19 21:34	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		126		70-135	%	06.03.19 21:34
o-Terphenyl	99		104		70-135	%	06.03.19 21:34

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091063

MB Sample Id: 7679177-1-BLK

Matrix: Solid

LCS Sample Id: 7679177-1-BKS

Prep Method: SW5030B

Date Prep: 06.03.19

LCSD Sample Id: 7679177-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000384	0.0998	0.0920	92	0.109	109	70-130	17	35	mg/kg	06.03.19 16:29	
Toluene	<0.000455	0.0998	0.0893	89	0.104	104	70-130	15	35	mg/kg	06.03.19 16:29	
Ethylbenzene	<0.000564	0.0998	0.0986	99	0.114	114	70-130	14	35	mg/kg	06.03.19 16:29	
m,p-Xylenes	<0.00101	0.200	0.201	101	0.233	117	70-130	15	35	mg/kg	06.03.19 16:29	
o-Xylene	<0.000344	0.0998	0.0961	96	0.113	113	70-130	16	35	mg/kg	06.03.19 16:29	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		98		105		70-130	%	06.03.19 16:29
4-Bromofluorobenzene	82		93		104		70-130	%	06.03.19 16:29

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091067

MB Sample Id: 7679178-1-BLK

Matrix: Solid

LCS Sample Id: 7679178-1-BKS

Prep Method: SW5030B

Date Prep: 06.03.19

LCSD Sample Id: 7679178-1-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	0.0984	98	0.0988	99	70-130	0	35	mg/kg	06.04.19 02:33	
Toluene	<0.000456	0.100	0.0938	94	0.0934	94	70-130	0	35	mg/kg	06.04.19 02:33	
Ethylbenzene	<0.000565	0.100	0.102	102	0.0995	100	70-130	2	35	mg/kg	06.04.19 02:33	
m,p-Xylenes	<0.00101	0.200	0.207	104	0.202	101	70-130	2	35	mg/kg	06.04.19 02:33	
o-Xylene	<0.000344	0.100	0.101	101	0.102	102	70-130	1	35	mg/kg	06.04.19 02:33	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		99		102		70-130	%	06.04.19 02:33
4-Bromofluorobenzene	81		96		103		70-130	%	06.04.19 02:33

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



QC Summary 626231

LT Environmental, Inc.

PLU 320H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091063

Parent Sample Id: 626228-001

Matrix: Soil

MS Sample Id: 626228-001 S

Prep Method: SW5030B

Date Prep: 06.03.19

MSD Sample Id: 626228-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0994	0.0972	98	0.105	104	70-130	8	35	mg/kg	06.03.19 17:10	
Toluene	<0.000453	0.0994	0.0923	93	0.102	101	70-130	10	35	mg/kg	06.03.19 17:10	
Ethylbenzene	<0.000561	0.0994	0.0982	99	0.110	109	70-130	11	35	mg/kg	06.03.19 17:10	
m,p-Xylenes	<0.00101	0.199	0.200	101	0.224	111	70-130	11	35	mg/kg	06.03.19 17:10	
o-Xylene	<0.000342	0.0994	0.0968	97	0.109	108	70-130	12	35	mg/kg	06.03.19 17:10	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		105		70-130	%	06.03.19 17:10
4-Bromofluorobenzene	104		108		70-130	%	06.03.19 17:10

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091067

Parent Sample Id: 626231-003

Matrix: Soil

MS Sample Id: 626231-003 S

Prep Method: SW5030B

Date Prep: 06.03.19

MSD Sample Id: 626231-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000474	0.0996	0.0955	95	0.0949	94	70-130	1	35	mg/kg	06.04.19 03:11	
Toluene	<0.000454	0.0996	0.0906	91	0.0900	90	70-130	1	35	mg/kg	06.04.19 03:11	
Ethylbenzene	<0.000563	0.0996	0.0978	98	0.0971	97	70-130	1	35	mg/kg	06.04.19 03:11	
m,p-Xylenes	<0.00101	0.199	0.198	99	0.196	98	70-130	1	35	mg/kg	06.04.19 03:11	
o-Xylene	0.000343	0.0996	0.0980	98	0.0973	97	70-130	1	35	mg/kg	06.04.19 03:11	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		102		70-130	%	06.04.19 03:11
4-Bromofluorobenzene	103		104		70-130	%	06.04.19 03:11

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

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

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

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



Chain of Custody

Work Order No: 1624231

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

www.xenco.com Page 1 of 1

Project Manager:	Ashley Ager	Bill To: (if different)	Kyle Little
Company Name:	LI Environmental Inc., Permian office	Company Name:	XTO-Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432.704.5178	Email:	ager@lienv.com mcalfee@lienv.com
Project Name:	PLU 320H	Turn Around	
Project Number:		Routine	☐
P.O. Number:	ZRP-5326	Rush:	24hr
Sampler's Name:	Robert McAlfee	Due Date:	
Work Order Comments			
Program: UST/ST ☐ RRP ☐ Brownfields ☐ RC ☐ Superfund ☐ State of Project: Reporting Level: I ☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV ☐ Deliverables: EDD ☐ ADAPT ☐ Other: ☐			

Project Name:	PLU 320H	Turn Around	
Project Number:		Routine	☐
P.O. Number:	ZRP-5326	Rush:	24hr
Sampler's Name:	Robert McAlfee	Due Date:	
Work Order Notes			
TAT starts the day received by the lab, if received by 4:30pm			
Sample Comments			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth					Sample Comments					
					Number	TPH (EP	BTEX (E	Chloride						
FS10	S	05/28/19	1515	4'	1	X	X	X						Composite
FS11			1515	4'		X	X	X						
FS12			1520	4'		X	X	X						
FS13			1530	4'		X	X	X						
FS14			1535	4'		X	X	X						
FS15			1600	4'		X	X	X						
FS16			1605	4'		X	X	X						
FS17			1610	4'		X	X	X						
FS18			1615	4'		X	X	X						
FS19		0529/19	0745	4'		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
<i>Robert McAlfee</i>	<i>Michael</i>	05-31-19 - P/A		<i>Michael</i>	05-31-19
					0735

ORIGIN ID: CACA (281) 240-4200
 SAMPLE CUSTODY
 SAMPLE CUSTODY
 1089 N CANAL ST
 CARLSBAD, NM 88220
 UNITED STATES US

SHIP DATE: 31MAY19
 ACTWGT: 48.00 LB
 CAD: 114488676/NET4100
 DIMS: 24x13x13 IN
 BILL SENDER

TO **SAMPLE RECEIVING MIDLAND**
FEDEX OFFICE PRINT & SHIP CENTER
FEDEX OFFICE PRINT & SHIP CENTER
200 W INTERSTATE 20

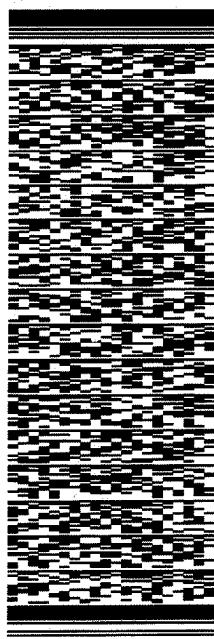
MIDLAND TX 79701

(432) 704-5440

REF:

PO:

DEPT:

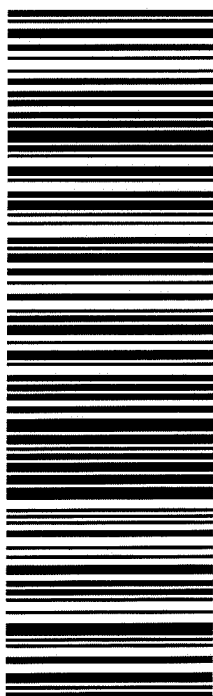


TRK# 7753 6207 1739
 0201

SATURDAY HOLD
PRIORITY OVERNIGHT

41 MAFA

HLD
 MAFKI
 LBB
 TX:US



5.5/5.1

565J11/D66C/23AD

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/03/2019 07:35:00 AM

Work Order #: 626231

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/03/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/03/2019

Analytical Report 626230

for
LT Environmental, Inc.

Project Manager: Ashley Ager

PLU 320 H

06-JUN-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

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

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

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



06-JUN-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **626230**

PLU 320 H

Project Address: Delaware Basin

Ashley Ager:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 626230. 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. 626230 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,

Kalei Stout

Midland Laboratory Director

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 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS19	S	05-29-19 07:45	4 ft	626230-001
FS20	S	05-29-19 08:00	4 ft	626230-002
FS21	S	05-29-19 08:20	1 ft	626230-003
FS22	S	05-29-19 08:30	4 ft	626230-004
FS23	S	05-29-19 08:35	4 ft	626230-005
FS24	S	05-29-19 08:40	4 ft	626230-006
FS25	S	05-29-19 08:45	1.5 ft	626230-007
FS26	S	05-29-19 08:50	3 ft	626230-008
FS27	S	05-29-19 08:55	3 ft	626230-009
FS28	S	05-29-19 09:10	3 ft	626230-010



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 320 H*

Project ID:
Work Order Number(s): 626230

Report Date: 06-JUN-19
Date Received: 06/03/2019

Sample receipt non conformance and comments:

None

Sample receipt non conformance and comments per sample:

None

Analytical non conformance and comments:

Batch: LBA-3091027 Chloride by EPA 300

Lab Sample ID 626238-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Chloride recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.

Samples in the analytical batch are: 626230-001, -002, -003, -004, -005, -006, -007, -008, -009, -010.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3091063 BTEX by EPA 8021B

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



Certificate of Analysis Summary 626230

LT Environmental, Inc., Arvada, CO

Project Name: PLU 320 H



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Mon Jun-03-19 07:35 am

Report Date: 06-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626230-001	626230-002	626230-003	626230-004	626230-005	626230-006
	Field Id:	FS19	FS20	FS21	FS22	FS23	FS24
	Depth:	4- ft	4- ft	1- ft	4- ft	4- ft	4- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	May-29-19 07:45	May-29-19 08:00	May-29-19 08:20	May-29-19 08:30	May-29-19 08:35	May-29-19 08:40
BTEX by EPA 8021B	Extracted:	Jun-03-19 11:00	Jun-03-19 11:00	Jun-03-19 11:00	Jun-03-19 11:00	Jun-03-19 11:00	Jun-03-19 11:00
	Analyzed:	Jun-03-19 21:09	Jun-03-19 21:28	Jun-03-19 22:44	Jun-03-19 23:04	Jun-03-19 23:23	Jun-03-19 23:42
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Benzene		<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202
Toluene		<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202
Ethylbenzene		<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202
m,p-Xylenes		<0.00398 0.00398	<0.00402 0.00402	<0.00398 0.00398	<0.00403 0.00403	<0.00399 0.00399	<0.00404 0.00404
o-Xylene		<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202
Total Xylenes		<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202
Total BTEX		<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202
Chloride by EPA 300	Extracted:	Jun-03-19 16:45	Jun-03-19 16:45	Jun-03-19 16:45	Jun-03-19 16:45	Jun-03-19 16:45	Jun-03-19 16:45
	Analyzed:	Jun-03-19 19:20	Jun-03-19 19:35	Jun-03-19 19:40	Jun-03-19 19:46	Jun-03-19 19:51	Jun-03-19 20:01
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Chloride		5.15 5.01	<4.96 4.96	6.69 4.99	6.37 5.00	7.39 5.04	5.16 5.00
TPH by SW8015 Mod	Extracted:	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00
	Analyzed:	Jun-06-19 06:18	Jun-06-19 06:57	Jun-06-19 07:17	Jun-06-19 07:36	Jun-06-19 07:56	Jun-06-19 08:16
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	20.9 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<14.9 14.9	20.9 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<14.9 14.9	20.9 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

Kalei Stout
Midland Laboratory Director



Certificate of Analysis Summary 626230

LT Environmental, Inc., Arvada, CO

Project Name: PLU 320 H



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Mon Jun-03-19 07:35 am

Report Date: 06-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626230-007	626230-008	626230-009	626230-010		
	Field Id:	FS25	FS26	FS27	FS27		
	Depth:	1.5- ft	3- ft	3- ft	3- ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	May-29-19 08:45	May-29-19 08:50	May-29-19 08:55	May-29-19 09:10		
BTEX by EPA 8021B	Extracted:	Jun-03-19 11:00	Jun-03-19 11:00	Jun-03-19 11:00	Jun-03-19 11:00		
	Analyzed:	Jun-04-19 00:02	Jun-04-19 00:21	Jun-04-19 00:40	Jun-04-19 00:59		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200		
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200		
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200		
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00402 0.00402	<0.00399 0.00399		
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200		
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200		
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200		
Chloride by EPA 300	Extracted:	Jun-03-19 16:45	Jun-03-19 16:45	Jun-03-19 16:45	Jun-03-19 16:45		
	Analyzed:	Jun-03-19 19:56	Jun-03-19 20:17	Jun-03-19 20:22	Jun-03-19 20:37		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		17.4 4.98	56.5 5.03	31.3 5.00	18.1 4.99		
TPH by SW8015 Mod	Extracted:	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00		
	Analyzed:	Jun-06-19 08:36	Jun-06-19 08:56	Jun-06-19 09:15	Jun-06-19 09:35		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		58.6 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total TPH		58.6 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total GRO-DRO		58.6 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		

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

Kalei Stout
Midland Laboratory Director



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **FS19**
Lab Sample Id: 626230-001

Matrix: Soil
Date Collected: 05.29.19 07.45

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091027

Date Prep: 06.03.19 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.15	5.01	mg/kg	06.03.19 19.20		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 06.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.06.19 06.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 06.18	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.06.19 06.18	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.06.19 06.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	06.06.19 06.18	
o-Terphenyl	84-15-1	100	%	70-135	06.06.19 06.18	



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **FS19**
Lab Sample Id: 626230-001

Matrix: Soil
Date Collected: 05.29.19 07.45

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Date Prep: 06.03.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.03.19 21.09	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.03.19 21.09	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.03.19 21.09	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.03.19 21.09	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.03.19 21.09	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.03.19 21.09	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.03.19 21.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.03.19 21.09		
4-Bromofluorobenzene	460-00-4	103	%	70-130	06.03.19 21.09		



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **FS20**
Lab Sample Id: 626230-002

Matrix: Soil
Date Collected: 05.29.19 08.00

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091027

Date Prep: 06.03.19 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	06.03.19 19.35	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.06.19 06.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.06.19 06.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.06.19 06.57	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.06.19 06.57	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.06.19 06.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.06.19 06.57	
o-Terphenyl	84-15-1	103	%	70-135	06.06.19 06.57	



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **FS20**
Lab Sample Id: 626230-002

Matrix: Soil
Date Collected: 05.29.19 08.00

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Date Prep: 06.03.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.03.19 21.28	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.03.19 21.28	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.03.19 21.28	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.03.19 21.28	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.03.19 21.28	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.03.19 21.28	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.03.19 21.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	06.03.19 21.28		
4-Bromofluorobenzene	460-00-4	80	%	70-130	06.03.19 21.28		



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: FS21
Lab Sample Id: 626230-003

Matrix: Soil
Date Collected: 05.29.19 08.20

Date Received: 06.03.19 07.35
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091027

Date Prep: 06.03.19 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.69	4.99	mg/kg	06.03.19 19.40		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 07.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	20.9	15.0	mg/kg	06.06.19 07.17		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 07.17	U	1
Total TPH	PHC635	20.9	15.0	mg/kg	06.06.19 07.17		1
Total GRO-DRO	PHC628	20.9	15.0	mg/kg	06.06.19 07.17		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	06.06.19 07.17	
o-Terphenyl	84-15-1	100	%	70-135	06.06.19 07.17	



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: FS21
Lab Sample Id: 626230-003

Matrix: Soil
Date Collected: 05.29.19 08.20

Date Received: 06.03.19 07.35
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Prep Method: SW5030B

% Moisture:

Date Prep: 06.03.19 11.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.03.19 22.44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.03.19 22.44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.03.19 22.44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.03.19 22.44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.03.19 22.44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.03.19 22.44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.03.19 22.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	06.03.19 22.44		
1,4-Difluorobenzene	540-36-3	93	%	70-130	06.03.19 22.44		



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: FS22
Lab Sample Id: 626230-004

Matrix: Soil
Date Collected: 05.29.19 08.30

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091027

Date Prep: 06.03.19 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.37	5.00	mg/kg	06.03.19 19.46		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 07.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.06.19 07.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 07.36	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.06.19 07.36	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.06.19 07.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	06.06.19 07.36	
o-Terphenyl	84-15-1	98	%	70-135	06.06.19 07.36	



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: FS22
Lab Sample Id: 626230-004

Matrix: Soil
Date Collected: 05.29.19 08.30

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Date Prep: 06.03.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.03.19 23.04	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.03.19 23.04	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.03.19 23.04	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	06.03.19 23.04	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.03.19 23.04	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.03.19 23.04	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.03.19 23.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.03.19 23.04		
4-Bromofluorobenzene	460-00-4	78	%	70-130	06.03.19 23.04		



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: FS23
Lab Sample Id: 626230-005

Matrix: Soil
Date Collected: 05.29.19 08.35

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091027

Date Prep: 06.03.19 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.39	5.04	mg/kg	06.03.19 19.51		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 07.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.06.19 07.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 07.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.06.19 07.56	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.06.19 07.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	06.06.19 07.56	
o-Terphenyl	84-15-1	100	%	70-135	06.06.19 07.56	



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: FS23
Lab Sample Id: 626230-005

Matrix: Soil
Date Collected: 05.29.19 08.35

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Date Prep: 06.03.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.03.19 23.23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.03.19 23.23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.03.19 23.23	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.03.19 23.23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.03.19 23.23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.03.19 23.23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.03.19 23.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.03.19 23.23		
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.03.19 23.23		



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: FS24
Lab Sample Id: 626230-006

Matrix: Soil
Date Collected: 05.29.19 08.40

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091027

Date Prep: 06.03.19 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.16	5.00	mg/kg	06.03.19 20.01		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 08.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.06.19 08.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 08.16	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.06.19 08.16	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.06.19 08.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.06.19 08.16	
o-Terphenyl	84-15-1	100	%	70-135	06.06.19 08.16	



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **FS24**
Lab Sample Id: 626230-006

Matrix: Soil
Date Collected: 05.29.19 08.40

Date Received: 06.03.19 07.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.03.19 11.00

Basis: Wet Weight

Seq Number: 3091063

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.03.19 23.42	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.03.19 23.42	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.03.19 23.42	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	06.03.19 23.42	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.03.19 23.42	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.03.19 23.42	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.03.19 23.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.03.19 23.42		
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.03.19 23.42		



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: FS25
Lab Sample Id: 626230-007

Matrix: Soil
Date Collected: 05.29.19 08.45

Date Received: 06.03.19 07.35
Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091027

Date Prep: 06.03.19 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.4	4.98	mg/kg	06.03.19 19.56		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 08.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	58.6	15.0	mg/kg	06.06.19 08.36		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 08.36	U	1
Total TPH	PHC635	58.6	15.0	mg/kg	06.06.19 08.36		1
Total GRO-DRO	PHC628	58.6	15.0	mg/kg	06.06.19 08.36		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	06.06.19 08.36	
o-Terphenyl	84-15-1	97	%	70-135	06.06.19 08.36	



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: FS25
Lab Sample Id: 626230-007

Matrix: Soil
Date Collected: 05.29.19 08.45

Date Received: 06.03.19 07.35
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Date Prep: 06.03.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.04.19 00.02	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.04.19 00.02	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.04.19 00.02	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.04.19 00.02	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.04.19 00.02	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.04.19 00.02	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.04.19 00.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	06.04.19 00.02		
1,4-Difluorobenzene	540-36-3	98	%	70-130	06.04.19 00.02		



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **FS26**
Lab Sample Id: 626230-008

Matrix: Soil
Date Collected: 05.29.19 08.50

Date Received: 06.03.19 07.35
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091027

Date Prep: 06.03.19 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	56.5	5.03	mg/kg	06.03.19 20.17		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 08.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.06.19 08.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 08.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.06.19 08.56	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.06.19 08.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	06.06.19 08.56	
o-Terphenyl	84-15-1	97	%	70-135	06.06.19 08.56	



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **FS26**
Lab Sample Id: 626230-008

Matrix: Soil
Date Collected: 05.29.19 08.50

Date Received: 06.03.19 07.35
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Date Prep: 06.03.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.04.19 00.21	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.04.19 00.21	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.04.19 00.21	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.04.19 00.21	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.04.19 00.21	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.04.19 00.21	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.04.19 00.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.04.19 00.21		
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.04.19 00.21		



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: FS27
Lab Sample Id: 626230-009

Matrix: Soil
Date Collected: 05.29.19 08.55

Date Received: 06.03.19 07.35
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091027

Date Prep: 06.03.19 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	31.3	5.00	mg/kg	06.03.19 20.22		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 09.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.06.19 09.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 09.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.06.19 09.15	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.06.19 09.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	06.06.19 09.15	
o-Terphenyl	84-15-1	100	%	70-135	06.06.19 09.15	



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: FS27
Lab Sample Id: 626230-009

Matrix: Soil
Date Collected: 05.29.19 08.55

Date Received: 06.03.19 07.35
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.03.19 11.00

Basis: Wet Weight

Seq Number: 3091063

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.04.19 00.40	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.04.19 00.40	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.04.19 00.40	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.04.19 00.40	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.04.19 00.40	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.04.19 00.40	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.04.19 00.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.04.19 00.40		
4-Bromofluorobenzene	460-00-4	90	%	70-130	06.04.19 00.40		



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **FS28**
Lab Sample Id: 626230-010

Matrix: Soil
Date Collected: 05.29.19 09.10

Date Received: 06.03.19 07.35
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091027

Date Prep: 06.03.19 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18.1	4.99	mg/kg	06.03.19 20.37		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 09.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.06.19 09.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 09.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.06.19 09.35	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.06.19 09.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	06.06.19 09.35	
o-Terphenyl	84-15-1	102	%	70-135	06.06.19 09.35	



Certificate of Analytical Results 626230



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **FS28**
Lab Sample Id: 626230-010

Matrix: Soil
Date Collected: 05.29.19 09.10

Date Received: 06.03.19 07.35
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Date Prep: 06.03.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.04.19 00.59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.04.19 00.59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.04.19 00.59	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.04.19 00.59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.04.19 00.59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.04.19 00.59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.04.19 00.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.04.19 00.59		
4-Bromofluorobenzene	460-00-4	101	%	70-130	06.04.19 00.59		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



QC Summary 626230

LT Environmental, Inc.

PLU 320 H

Analytical Method: Chloride by EPA 300

Seq Number: 3091027

MB Sample Id: 7679088-1-BLK

Matrix: Solid

LCS Sample Id: 7679088-1-BKS

Prep Method: E300P

Date Prep: 06.03.19

LCSD Sample Id: 7679088-1-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	238	95	237	95	90-110	0	20	mg/kg	06.03.19 18:39	

Analytical Method: Chloride by EPA 300

Seq Number: 3091027

Parent Sample Id: 626230-006

Matrix: Soil

MS Sample Id: 626230-006 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626230-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.16	250	282	111	281	110	90-110	0	20	mg/kg	06.03.19 20:06	X

Analytical Method: Chloride by EPA 300

Seq Number: 3091027

Parent Sample Id: 626238-001

Matrix: Soil

MS Sample Id: 626238-001 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626238-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	307	252	566	103	566	103	90-110	0	20	mg/kg	06.03.19 18:54	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091360

MB Sample Id: 7679342-1-BLK

Matrix: Solid

LCS Sample Id: 7679342-1-BKS

Prep Method: TX1005P

Date Prep: 06.05.19

LCSD Sample Id: 7679342-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1090	109	1140	114	70-135	4	20	mg/kg	06.06.19 01:24	
Diesel Range Organics (DRO)	<8.13	1000	1030	103	1080	108	70-135	5	20	mg/kg	06.06.19 01:24	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		123		126		70-135	%	06.06.19 01:24
o-Terphenyl	100		110		116		70-135	%	06.06.19 01:24

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



QC Summary 626230

LT Environmental, Inc.

PLU 320 H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091360

Parent Sample Id: 626368-001

Matrix: Soil

MS Sample Id: 626368-001 S

Prep Method: TX1005P

Date Prep: 06.05.19

MSD Sample Id: 626368-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	9.70	998	1070	106	1080	107	70-135	1	20	mg/kg	06.06.19 02:23	
Diesel Range Organics (DRO)	12.8	998	1010	100	1010	100	70-135	0	20	mg/kg	06.06.19 02:23	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		127		70-135	%	06.06.19 02:23
o-Terphenyl	115		114		70-135	%	06.06.19 02:23

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091063

MB Sample Id: 7679177-1-BLK

Matrix: Solid

LCS Sample Id: 7679177-1-BKS

Prep Method: SW5030B

Date Prep: 06.03.19

LCSD Sample Id: 7679177-1-BSL

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000384	0.0998	0.0920	92	0.109	109	70-130	17	35	mg/kg	06.03.19 16:29	
Toluene	<0.000455	0.0998	0.0893	89	0.104	104	70-130	15	35	mg/kg	06.03.19 16:29	
Ethylbenzene	<0.000564	0.0998	0.0986	99	0.114	114	70-130	14	35	mg/kg	06.03.19 16:29	
m,p-Xylenes	<0.00101	0.200	0.201	101	0.233	117	70-130	15	35	mg/kg	06.03.19 16:29	
o-Xylene	<0.000344	0.0998	0.0961	96	0.113	113	70-130	16	35	mg/kg	06.03.19 16:29	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		98		105		70-130	%	06.03.19 16:29
4-Bromofluorobenzene	82		93		104		70-130	%	06.03.19 16:29

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091063

Parent Sample Id: 626228-001

Matrix: Soil

MS Sample Id: 626228-001 S

Prep Method: SW5030B

Date Prep: 06.03.19

MSD Sample Id: 626228-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0994	0.0972	98	0.105	104	70-130	8	35	mg/kg	06.03.19 17:10	
Toluene	<0.000453	0.0994	0.0923	93	0.102	101	70-130	10	35	mg/kg	06.03.19 17:10	
Ethylbenzene	<0.000561	0.0994	0.0982	99	0.110	109	70-130	11	35	mg/kg	06.03.19 17:10	
m,p-Xylenes	<0.00101	0.199	0.200	101	0.224	111	70-130	11	35	mg/kg	06.03.19 17:10	
o-Xylene	<0.000342	0.0994	0.0968	97	0.109	108	70-130	12	35	mg/kg	06.03.19 17:10	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		105		70-130	%	06.03.19 17:10
4-Bromofluorobenzene	104		108		70-130	%	06.03.19 17:10

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

Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296
Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3333

Hobbs, NM (5/5-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

Page 1 of 1

Project Manager:	Ashley Ager	Bill to: (if different)	Kyle Little
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO-Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432.704.5178	Email:	ager@ltenv.com rmcatee@ltenv.com

Work Order Comments	
Program: UST/PT	☐ BP ☐ Brownfields ☐ RC ☐ Superfund
State of Project:	
Reporting Level II	☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV
Deliverables: EDD	☐ ADAPT ☐ Other:

[illegible]

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EP)	BTEX (EP)	Chloride	Sample Comments									
FS19	S	05/29/19	0745	4'	1	X	X	X	Composite									
FS20			0800	4'	1	X	X	X										
FS21			0820	1'		X	X	X										
FS22			0830	4'		X	X	X										
FS23			0835	4'		X	X	X										
FS24			0840	4'		X	X	X										
FS25			0845	15'		X	X	X										
FS26			0850	3'		X	X	X										
FS27			0855	3'		X	X	X										
FS28			0910	3'		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	SiO ₂	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 <td>Ag</td> <td>Ti</td> <td>U</td> <td colspan="10"></td>	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
		05-31-19 10:10			06/3/19
					0735

ORIGIN ID:CAOA (281) 240-4200
 SAMPLE CUSTODY
 SAMPLE CUSTODY
 1089 N CANAL ST
 CARLSBAD, NM 88220
 UNITED STATES US

SHIP DATE: 31MAY19
 ACTWGT: 48.00 LB
 CAD: 114488676/NET/4100
 DIMS: 24x13x13 IN
 BILL SENDER

TO **SAMPLE RECEIVING MIDLAND**
FEDEX OFFICE PRINT & SHIP CENTER
FEDEX OFFICE PRINT & SHIP CENTER
200 W INTERSTATE 20

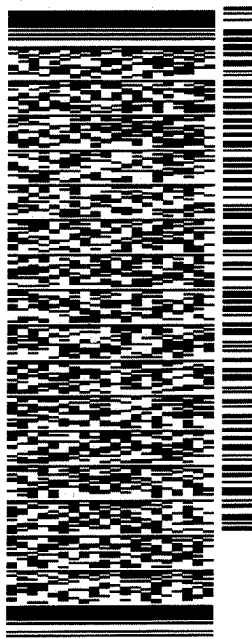
MIDLAND TX 79701

(432) 704-5440

REF:

PO:

DEPT:



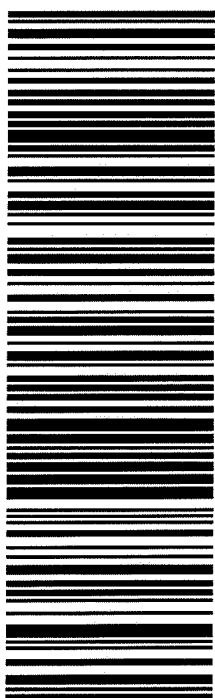
565J1/D66C/23AD

TRK# 7753 6207 1739
 0201

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41 MAFA

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 MAFKI
 LBB
 TX:US



5.5/5.1

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/03/2019 07:35:00 AM

Work Order #: 626230

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/03/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/03/2019

Analytical Report 626229

for
LT Environmental, Inc.

Project Manager: Ashley Ager

PLU 320 H

04-JUN-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

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

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

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



04-JUN-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **626229**

PLU 320 H

Project Address: Delaware Basin

Ashley Ager:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 626229. 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. 626229 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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Sample Cross Reference 626229



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS29	S	05-29-19 09:15	2 ft	626229-001
FS30	S	05-29-19 09:20	3 ft	626229-002
FS31	S	05-29-19 09:25	3 ft	626229-003



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 320 H*

Project ID:
Work Order Number(s): 626229

Report Date: 04-JUN-19
Date Received: 06/03/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3091048 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 626229-001,626229-002,626229-003.

Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 626240-001 S,626240-001 SD.

Batch: LBA-3091063 BTEX by EPA 8021B

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



Certificate of Analysis Summary 626229

LT Environmental, Inc., Arvada, CO

Project Name: PLU 320 H



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Mon Jun-03-19 07:35 am

Report Date: 04-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626229-001	626229-002	626229-003			
	Field Id:	FS29	FS30	FS31			
	Depth:	2- ft	3- ft	3- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	May-29-19 09:15	May-29-19 09:20	May-29-19 09:25			
BTEX by EPA 8021B	Extracted:	Jun-03-19 11:00	Jun-03-19 11:00	Jun-03-19 11:00			
	Analyzed:	Jun-03-19 20:11	Jun-03-19 20:30	Jun-03-19 20:49			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
	Benzene	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200			
	Toluene	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200			
Ethylbenzene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200			
m,p-Xylenes		<0.00397 0.00397	<0.00401 0.00401	<0.00399 0.00399			
o-Xylene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200			
Total Xylenes		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200			
Total BTEX		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200			
Chloride by EPA 300	Extracted:	Jun-03-19 14:30	Jun-03-19 14:30	Jun-03-19 14:30			
	Analyzed:	Jun-03-19 16:56	Jun-03-19 17:01	Jun-03-19 17:06			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
	Chloride	13.5 4.98	14.0 5.02	29.6 4.96			
TPH by SW8015 Mod	Extracted:	Jun-03-19 17:00	Jun-03-19 17:00	Jun-03-19 17:00			
	Analyzed:	Jun-03-19 22:34	Jun-03-19 22:58	Jun-03-19 23:24			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0	<15.0 15.0	<15.0 15.0			
	Diesel Range Organics (DRO)	<15.0 15.0	<15.0 15.0	<15.0 15.0			
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0			

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 626229



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: FS29
Lab Sample Id: 626229-001

Matrix: Soil
Date Collected: 05.29.19 09.15

Date Received: 06.03.19 07.35
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091011

Date Prep: 06.03.19 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.5	4.98	mg/kg	06.03.19 16.56		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.03.19 22.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.03.19 22.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.03.19 22.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.03.19 22.34	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.03.19 22.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	139	%	70-135	06.03.19 22.34	**
o-Terphenyl	84-15-1	117	%	70-135	06.03.19 22.34	



Certificate of Analytical Results 626229



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **FS29**
Lab Sample Id: 626229-001

Matrix: Soil
Date Collected: 05.29.19 09.15

Date Received: 06.03.19 07.35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Date Prep: 06.03.19 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	06.03.19 20.11	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.03.19 20.11	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.03.19 20.11	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.03.19 20.11	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.03.19 20.11	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.03.19 20.11	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.03.19 20.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.03.19 20.11		
4-Bromofluorobenzene	460-00-4	103	%	70-130	06.03.19 20.11		



Certificate of Analytical Results 626229



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **FS30**
Lab Sample Id: 626229-002

Matrix: Soil
Date Collected: 05.29.19 09.20

Date Received: 06.03.19 07.35
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091011

Date Prep: 06.03.19 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.0	5.02	mg/kg	06.03.19 17.01		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.03.19 22.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.03.19 22.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.03.19 22.58	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.03.19 22.58	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.03.19 22.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	139	%	70-135	06.03.19 22.58	**
o-Terphenyl	84-15-1	115	%	70-135	06.03.19 22.58	



Certificate of Analytical Results 626229



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **FS30**
Lab Sample Id: 626229-002

Matrix: Soil
Date Collected: 05.29.19 09.20

Date Received: 06.03.19 07.35
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Date Prep: 06.03.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.03.19 20.30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.03.19 20.30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.03.19 20.30	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.03.19 20.30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.03.19 20.30	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.03.19 20.30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.03.19 20.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	06.03.19 20.30		
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.03.19 20.30		



Certificate of Analytical Results 626229



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: FS31
Lab Sample Id: 626229-003

Matrix: Soil
Date Collected: 05.29.19 09.25

Date Received: 06.03.19 07.35
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091011

Date Prep: 06.03.19 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	29.6	4.96	mg/kg	06.03.19 17.06		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.03.19 23.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.03.19 23.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.03.19 23.24	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.03.19 23.24	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.03.19 23.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	140	%	70-135	06.03.19 23.24	**
o-Terphenyl	84-15-1	117	%	70-135	06.03.19 23.24	



Certificate of Analytical Results 626229



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **FS31**
Lab Sample Id: 626229-003

Matrix: Soil
Date Collected: 05.29.19 09.25

Date Received: 06.03.19 07.35
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091063

Date Prep: 06.03.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.03.19 20.49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.03.19 20.49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.03.19 20.49	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.03.19 20.49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.03.19 20.49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.03.19 20.49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.03.19 20.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.03.19 20.49		
4-Bromofluorobenzene	460-00-4	101	%	70-130	06.03.19 20.49		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 626229

LT Environmental, Inc.

PLU 320 H

Analytical Method: Chloride by EPA 300

Seq Number: 3091011

MB Sample Id: 7679058-1-BLK

Matrix: Solid

LCS Sample Id: 7679058-1-BKS

Prep Method: E300P

Date Prep: 06.03.19

LCSD Sample Id: 7679058-1-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	235	94	234	94	90-110	0	20	mg/kg	06.03.19 15:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3091011

Parent Sample Id: 626227-001

Matrix: Soil

MS Sample Id: 626227-001 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626227-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	322	253	575	100	571	98	90-110	1	20	mg/kg	06.03.19 16:04	

Analytical Method: Chloride by EPA 300

Seq Number: 3091011

Parent Sample Id: 626231-001

Matrix: Soil

MS Sample Id: 626231-001 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626231-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.71	250	270	104	267	103	90-110	1	20	mg/kg	06.03.19 17:16	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091048

MB Sample Id: 7679160-1-BLK

Matrix: Solid

LCS Sample Id: 7679160-1-BKS

Prep Method: TX1005P

Date Prep: 06.03.19

LCSD Sample Id: 7679160-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1120	112	1170	117	70-135	4	20	mg/kg	06.03.19 19:12	
Diesel Range Organics (DRO)	<8.13	1000	1130	113	1190	119	70-135	5	20	mg/kg	06.03.19 19:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	80		70		129		70-135	%	06.03.19 19:12
o-Terphenyl	72		76		132		70-135	%	06.03.19 19:12

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

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

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

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



QC Summary 626229

LT Environmental, Inc.

PLU 320 H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091048

Parent Sample Id: 626240-001

Matrix: Soil

MS Sample Id: 626240-001 S

Prep Method: TX1005P

Date Prep: 06.03.19

MSD Sample Id: 626240-001 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)	495	997	1660	117	1760	127	70-135	6	20	mg/kg	06.04.19 08:20	
Diesel Range Organics (DRO)	24300	997	18600	0	22300	0	70-135	18	20	mg/kg	06.04.19 08:20	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		121		70-135	%	06.04.19 08:20
o-Terphenyl	337	**	401	**	70-135	%	06.04.19 08:20

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091063

MB Sample Id: 7679177-1-BLK

Matrix: Solid

LCS Sample Id: 7679177-1-BKS

Prep Method: SW5030B

Date Prep: 06.03.19

LCSD Sample Id: 7679177-1-BSL

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000384	0.0998	0.0920	92	0.109	109	70-130	17	35	mg/kg	06.03.19 16:29	
Toluene	<0.000455	0.0998	0.0893	89	0.104	104	70-130	15	35	mg/kg	06.03.19 16:29	
Ethylbenzene	<0.000564	0.0998	0.0986	99	0.114	114	70-130	14	35	mg/kg	06.03.19 16:29	
m,p-Xylenes	<0.00101	0.200	0.201	101	0.233	117	70-130	15	35	mg/kg	06.03.19 16:29	
o-Xylene	<0.000344	0.0998	0.0961	96	0.113	113	70-130	16	35	mg/kg	06.03.19 16:29	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		98		105		70-130	%	06.03.19 16:29
4-Bromofluorobenzene	82		93		104		70-130	%	06.03.19 16:29

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091063

Parent Sample Id: 626228-001

Matrix: Soil

MS Sample Id: 626228-001 S

Prep Method: SW5030B

Date Prep: 06.03.19

MSD Sample Id: 626228-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0994	0.0972	98	0.105	104	70-130	8	35	mg/kg	06.03.19 17:10	
Toluene	<0.000453	0.0994	0.0923	93	0.102	101	70-130	10	35	mg/kg	06.03.19 17:10	
Ethylbenzene	<0.000561	0.0994	0.0982	99	0.110	109	70-130	11	35	mg/kg	06.03.19 17:10	
m,p-Xylenes	<0.00101	0.199	0.200	101	0.224	111	70-130	11	35	mg/kg	06.03.19 17:10	
o-Xylene	<0.000342	0.0994	0.0968	97	0.109	108	70-130	12	35	mg/kg	06.03.19 17:10	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		105		70-130	%	06.03.19 17:10
4-Bromofluorobenzene	104		108		70-130	%	06.03.19 17:10

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

Page 1 of 1
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Work Order Notes

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

Sample Comments

1631 / 245.1 / 7470 / 7471 : Hg

Data/Times

ORIGIN ID: CACAO (281) 240-4200
 SAMPLE CUSTODY
 SAMPLE CUSTODY
 1089 N CANAL ST
 CARLSBAD, NM 88220
 UNITED STATES US

SHIP DATE: 31MAY19
 ACTWGT: 48.00 LB
 CAD: 114488676INET4100
 DIMS: 24x13x13 IN

BILL SENDER

TO SAMPLE RECEIVING MIDLAND

FEDEX OFFICE PRINT & SHIP CENTER
 FEDEX OFFICE PRINT & SHIP CENTER
 200 W INTERSTATE 20

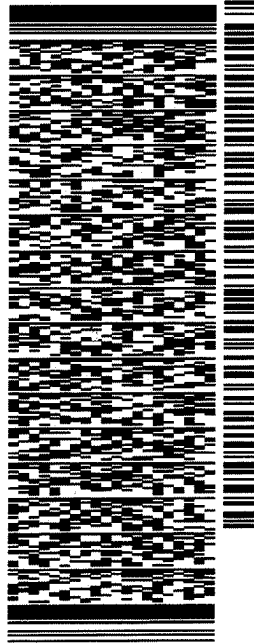
MIDLAND TX 79701

(432) 704-5440

REF:

PO:

DEPT:

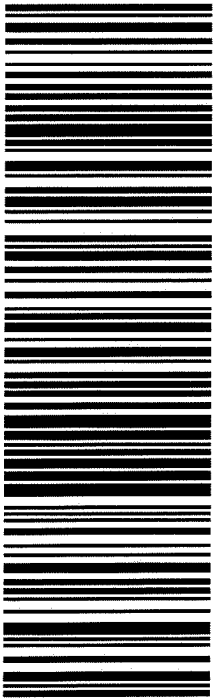


TRK# 7753 6207 1739
 0201

SATURDAY HOLD
 PRIORITY OVERNIGHT

41 MAFA

HLD
 MAFKI
 LBB
 TX-US



5.5/5.1

565J1/D66C/23AD

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/03/2019 07:35:00 AM

Work Order #: 626229

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/03/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/03/2019

Analytical Report 626233

for
LT Environmental, Inc.

Project Manager: Ashley Ager

PLU 320 H

04-JUN-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

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

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

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



04-JUN-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **626233**

PLU 320 H

Project Address: Delaware Basin

Ashley Ager:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 626233. 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. 626233 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 626233



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW01	S	05-29-19 09:35	0 - 4 ft	626233-001
SW02	S	05-29-19 09:30	0 - 4 ft	626233-002
SW03	S	05-29-19 09:40	0 - 3 ft	626233-003



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 320 H*

Project ID:
Work Order Number(s): 626233

Report Date: 04-JUN-19
Date Received: 06/03/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3091067 BTEX by EPA 8021B

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

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 626233-003.



Certificate of Analysis Summary 626233

LT Environmental, Inc., Arvada, CO

Project Name: PLU 320 H



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Mon Jun-03-19 07:35 am

Report Date: 04-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626233-001	626233-002	626233-003			
	Field Id:	SW01	SW02	SW03			
	Depth:	0-4 ft	0-4 ft	0-3 ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	May-29-19 09:35	May-29-19 09:30	May-29-19 09:40			
BTEX by EPA 8021B	Extracted:	Jun-03-19 12:00	Jun-03-19 12:00	Jun-03-19 12:00			
	Analyzed:	Jun-04-19 22:09	Jun-04-19 22:28	Jun-04-19 22:49			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199			
Toluene		<0.00200 0.00200	<0.00202 0.00202	0.00251 0.00199			
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202	0.00694 0.00199			
m,p-Xylenes		<0.00400 0.00400	<0.00403 0.00403	0.0403 0.00398			
o-Xylene		<0.00200 0.00200	<0.00202 0.00202	0.0224 0.00199			
Total Xylenes		<0.00200 0.00200	<0.00202 0.00202	0.0627 0.00199			
Total BTEX		<0.00200 0.00200	<0.00202 0.00202	0.0722 0.00199			
Chloride by EPA 300	Extracted:	Jun-03-19 15:20	Jun-03-19 15:20	Jun-03-19 15:20			
	Analyzed:	Jun-04-19 02:54	Jun-04-19 03:04	Jun-04-19 03:13			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		46.3 5.00	13.0 4.99	40.3 5.05			
TPH by SW8015 Mod	Extracted:	Jun-03-19 09:00	Jun-03-19 09:00	Jun-03-19 09:00			
	Analyzed:	Jun-03-19 17:25	Jun-03-19 17:46	Jun-03-19 18:07			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	47.6 15.0			
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	530 15.0			
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	89.7 15.0			
Total TPH		<15.0 15.0	<14.9 14.9	667 15.0			
Total GRO-DRO		<15.0 15.0	<14.9 14.9	578 15.0			

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 626233



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **SW01**
Lab Sample Id: 626233-001

Matrix: Soil
Date Collected: 05.29.19 09.35

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	46.3	5.00	mg/kg	06.04.19 02.54		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091045

Date Prep: 06.03.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.03.19 17.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.03.19 17.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.03.19 17.25	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.03.19 17.25	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.03.19 17.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	06.03.19 17.25	
o-Terphenyl	84-15-1	96	%	70-135	06.03.19 17.25	



Certificate of Analytical Results 626233



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **SW01**
Lab Sample Id: 626233-001

Matrix: Soil
Date Collected: 05.29.19 09.35

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.04.19 22.09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.04.19 22.09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.04.19 22.09	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.04.19 22.09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.04.19 22.09	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.04.19 22.09	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.04.19 22.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.04.19 22.09		
4-Bromofluorobenzene	460-00-4	102	%	70-130	06.04.19 22.09		



Certificate of Analytical Results 626233



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **SW02**
Lab Sample Id: 626233-002

Matrix: Soil
Date Collected: 05.29.19 09.30

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.0	4.99	mg/kg	06.04.19 03.04		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091045

Date Prep: 06.03.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.03.19 17.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.03.19 17.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.03.19 17.46	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.03.19 17.46	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.03.19 17.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	06.03.19 17.46	
o-Terphenyl	84-15-1	88	%	70-135	06.03.19 17.46	



Certificate of Analytical Results 626233



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **SW02**
Lab Sample Id: 626233-002

Matrix: Soil
Date Collected: 05.29.19 09.30

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.04.19 22.28	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.04.19 22.28	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.04.19 22.28	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	06.04.19 22.28	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.04.19 22.28	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.04.19 22.28	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.04.19 22.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	06.04.19 22.28		
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.04.19 22.28		



Certificate of Analytical Results 626233



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **SW03**
Lab Sample Id: 626233-003

Matrix: Soil
Date Collected: 05.29.19 09.40

Date Received: 06.03.19 07.35
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	40.3	5.05	mg/kg	06.04.19 03.13		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091045

Date Prep: 06.03.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	47.6	15.0	mg/kg	06.03.19 18.07		1
Diesel Range Organics (DRO)	C10C28DRO	530	15.0	mg/kg	06.03.19 18.07		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	89.7	15.0	mg/kg	06.03.19 18.07		1
Total TPH	PHC635	667	15.0	mg/kg	06.03.19 18.07		1
Total GRO-DRO	PHC628	578	15.0	mg/kg	06.03.19 18.07		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	06.03.19 18.07	
o-Terphenyl	84-15-1	107	%	70-135	06.03.19 18.07	



Certificate of Analytical Results 626233



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **SW03**
Lab Sample Id: 626233-003

Matrix: Soil
Date Collected: 05.29.19 09.40

Date Received: 06.03.19 07.35
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.04.19 22.49	U	1
Toluene	108-88-3	0.00251	0.00199	mg/kg	06.04.19 22.49		1
Ethylbenzene	100-41-4	0.00694	0.00199	mg/kg	06.04.19 22.49		1
m,p-Xylenes	179601-23-1	0.0403	0.00398	mg/kg	06.04.19 22.49		1
o-Xylene	95-47-6	0.0224	0.00199	mg/kg	06.04.19 22.49		1
Total Xylenes	1330-20-7	0.0627	0.00199	mg/kg	06.04.19 22.49		1
Total BTEX		0.0722	0.00199	mg/kg	06.04.19 22.49		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	149		%	70-130	06.04.19 22.49	**
1,4-Difluorobenzene	540-36-3	96		%	70-130	06.04.19 22.49	

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 626233

LT Environmental, Inc.

PLU 320 H

Analytical Method: Chloride by EPA 300

Seq Number: 3091018

MB Sample Id: 7679075-1-BLK

Matrix: Solid

LCS Sample Id: 7679075-1-BKS

Prep Method: E300P

Date Prep: 06.03.19

LCSD Sample Id: 7679075-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	239	96	239	96	90-110	0	20	mg/kg	06.03.19 23:05	

Analytical Method: Chloride by EPA 300

Seq Number: 3091018

Parent Sample Id: 626234-003

Matrix: Soil

MS Sample Id: 626234-003 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626234-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.850	248	261	105	261	105	90-110	0	20	mg/kg	06.04.19 01:47	

Analytical Method: Chloride by EPA 300

Seq Number: 3091018

Parent Sample Id: 626272-001

Matrix: Soil

MS Sample Id: 626272-001 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626272-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	755	250	992	95	991	94	90-110	0	20	mg/kg	06.03.19 23:33	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091045

MB Sample Id: 7679157-1-BLK

Matrix: Solid

LCS Sample Id: 7679157-1-BKS

Prep Method: TX1005P

Date Prep: 06.03.19

LCSD Sample Id: 7679157-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1060	106	1080	108	70-135	2	20	mg/kg	06.03.19 11:19	
Diesel Range Organics (DRO)	<8.13	1000	983	98	1010	101	70-135	3	20	mg/kg	06.03.19 11:19	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		122		124		70-135	%	06.03.19 11:19
o-Terphenyl	101		121		115		70-135	%	06.03.19 11:19

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



QC Summary 626233

LT Environmental, Inc.

PLU 320 H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091045

Parent Sample Id: 626236-001

Matrix: Soil

MS Sample Id: 626236-001 S

Prep Method: TX1005P

Date Prep: 06.03.19

MSD Sample Id: 626236-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	9.10	999	1080	107	1090	108	70-135	1	20	mg/kg	06.03.19 12:18	
Diesel Range Organics (DRO)	14.0	999	1020	101	1040	103	70-135	2	20	mg/kg	06.03.19 12:18	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		127		70-135	%	06.03.19 12:18
o-Terphenyl	116		114		70-135	%	06.03.19 12:18

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091067

MB Sample Id: 7679178-1-BLK

Matrix: Solid

LCS Sample Id: 7679178-1-BKS

Prep Method: SW5030B

Date Prep: 06.03.19

LCSD Sample Id: 7679178-1-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	0.0984	98	0.0988	99	70-130	0	35	mg/kg	06.04.19 02:33	
Toluene	<0.000456	0.100	0.0938	94	0.0934	94	70-130	0	35	mg/kg	06.04.19 02:33	
Ethylbenzene	<0.000565	0.100	0.102	102	0.0995	100	70-130	2	35	mg/kg	06.04.19 02:33	
m,p-Xylenes	<0.00101	0.200	0.207	104	0.202	101	70-130	2	35	mg/kg	06.04.19 02:33	
o-Xylene	<0.000344	0.100	0.101	101	0.102	102	70-130	1	35	mg/kg	06.04.19 02:33	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		99		102		70-130	%	06.04.19 02:33
4-Bromofluorobenzene	81		96		103		70-130	%	06.04.19 02:33

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091067

Parent Sample Id: 626231-003

Matrix: Soil

MS Sample Id: 626231-003 S

Prep Method: SW5030B

Date Prep: 06.03.19

MSD Sample Id: 626231-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000474	0.0996	0.0955	95	0.0949	94	70-130	1	35	mg/kg	06.04.19 03:11	
Toluene	<0.000454	0.0996	0.0906	91	0.0900	90	70-130	1	35	mg/kg	06.04.19 03:11	
Ethylbenzene	<0.000563	0.0996	0.0978	98	0.0971	97	70-130	1	35	mg/kg	06.04.19 03:11	
m,p-Xylenes	<0.00101	0.199	0.198	99	0.196	98	70-130	1	35	mg/kg	06.04.19 03:11	
o-Xylene	0.000343	0.0996	0.0980	98	0.0973	97	70-130	1	35	mg/kg	06.04.19 03:11	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		102		70-130	%	06.04.19 03:11
4-Bromofluorobenzene	103		104		70-130	%	06.04.19 03:11

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



www.xenco.com Page 1 of 1

Project Manager:	Ashley Ager	Bill to: (if different)	Kyle Litrel
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO-Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432.704.5178	Email:	aaager@llenvy.com rmcalfee@llenvy.com

Work Order Comments			
Program:	UST/PST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐		
State of Project:			
Reporting Level II ☐ Level III ☐ PST/UST ☐ PRP ☐ Level IV ☐			
Deliverables: EDD ☐ ADAPT ☐ Other: ☐			

Project Name:	PLU 320H	Turn Around
Project Number:		Routine ☐
P.O. Number:	ZRP-5326	Rush: 2%✓
Sampler's Name:	Robert McAfee	Due Date:
SAMPLE RECEIPT		
Temperature (°C):	Temp Blank: 0510.3	Yes No Wet Ice: Yes No
Received intact:	(Yes) No	Thermometer ID: 72
Cooler Custody Seals:	Yes No N/A	Correction Factor: -0.2
Sample Custody Seals:	Yes No N/A	Total Containers:
Number of Containers		
EPA 8015)		
EPA 0=8021)		
e (EPA 300.0)		
TAT starts the day received by the lab, if received by 4:30pm		
Work Order Notes		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E)	BTEX (I)	Chloride	Sample Comments
SW01	S	05/29/19	0935	0-4'	1	X	X	X	Composite ↑
SW02	↑		0930	0-4'	↑	X	X	X	
SW03	↑		0940	0-3'	↑	X	X	X	

Total	200.7 / 6010	200.8 / 6020:	Circle Method(s) and Metal(s) to be analyzed																											
8RCRA	13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Sa	Ag	SiO2	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 / 17470 / 7471 : Hg																											

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xorco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xorco 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 this control. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xorco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>Robert M. [Signature]</i>	<i>W. [Signature]</i>	2-20-05	3-17	<i>[Signature]</i>	4:13/19
2					07:35
3					
4					
5					
6					

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ORIGIN ID: CACA (281) 240-4200
 SAMPLE CUSTODY
 SAMPLE CUSTODY
 1089 N CANAL ST
 CARLSBAD, NM 88220
 UNITED STATES US

SHIP DATE: 31MAY19
 ACTWGT: 48.00 LB
 CAD: 114488676/INET4100
 DIMS: 24x13x13 IN

BILL SENDER

TO SAMPLE RECEIVING MIDLAND

FEDEx OFFICE PRINT & SHIP CENTER
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 200 W INTERSTATE 20

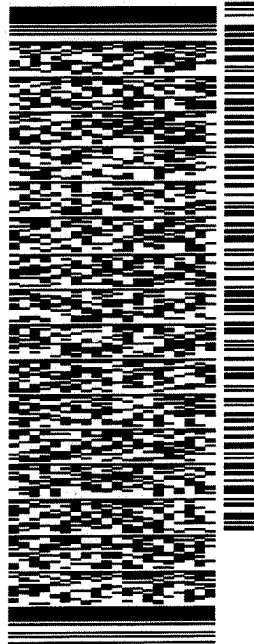
MIDLAND TX 79701

(432) 704-5440

REF:

INV:

DEPT:



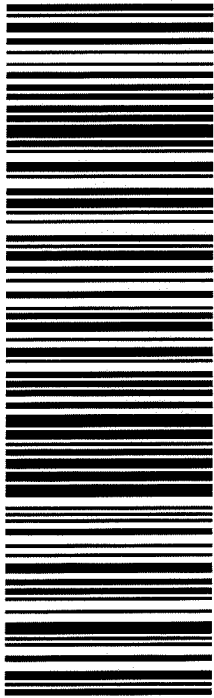
565J1/D66C/23AD

TRK# 7753 6207 1739
 0201

SATURDAY HOLD
 PRIORITY OVERNIGHT

41 MAFA

HLD
 MAFKI
 LBB
 TX-US



5.5/5.1

After printing this label:

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2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/03/2019 07:35:00 AM

Work Order #: 626233

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/03/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/03/2019

Analytical Report 626234

for
LT Environmental, Inc.

Project Manager: Ashley Ager

PLU 320H

04-JUN-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

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

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

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



04-JUN-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **626234**

PLU 320H

Project Address: Delaware Basin

Ashley Ager:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 626234. 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. 626234 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

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Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 626234



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW04	S	05-29-19 09:45	0 - 4 ft	626234-001
SW05	S	05-29-19 09:50	0 - 4 ft	626234-002
SW06	S	05-29-19 09:55	0 - 4 ft	626234-003
SW07	S	05-29-19 10:00	0 - 4 ft	626234-004
SW08	S	05-29-19 10:10	0 - 3 ft	626234-005
SW09	S	05-29-19 10:15	0 - 3 ft	626234-006



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 320H*

Project ID:
Work Order Number(s): 626234

Report Date: 04-JUN-19
Date Received: 06/03/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3091067 BTEX by EPA 8021B

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

Batch: LBA-3091068 BTEX by EPA 8021B

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



Certificate of Analysis Summary 626234

LT Environmental, Inc., Arvada, CO

Project Name: PLU 320H



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Mon Jun-03-19 07:35 am

Report Date: 04-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626234-001	626234-002	626234-003	626234-004	626234-005	626234-006
	Field Id:	SW04	SW05	SW06	SW07	SW08	SW09
	Depth:	0-4 ft	0-4 ft	0-4 ft	0-4 ft	0-3 ft	0-3 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	May-29-19 09:45	May-29-19 09:50	May-29-19 09:55	May-29-19 10:00	May-29-19 10:10	May-29-19 10:15
BTEX by EPA 8021B	Extracted:	Jun-03-19 12:00	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00
	Analyzed:	Jun-04-19 23:08	Jun-03-19 19:45	Jun-03-19 20:04	Jun-03-19 19:26	Jun-03-19 20:23	Jun-03-19 20:42
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00400 0.00400	<0.00398 0.00398	<0.00402 0.00402	<0.00403 0.00403	<0.00399 0.00399	<0.00401 0.00401
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300	Extracted:	Jun-03-19 15:20	Jun-03-19 15:20	Jun-03-19 15:20	Jun-03-19 15:20	Jun-03-19 15:20	Jun-03-19 15:20
	Analyzed:	Jun-04-19 01:18	Jun-04-19 01:28	Jun-04-19 01:38	Jun-04-19 02:06	Jun-04-19 02:16	Jun-04-19 02:45
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		10.7 4.95	45.7 5.00	<4.95 4.95	15.7 5.01	29.1 4.98	<4.96 4.96
TPH by SW8015 Mod	Extracted:	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00	Jun-03-19 15:00
	Analyzed:	Jun-04-19 06:11	Jun-04-19 07:10	Jun-04-19 07:29	Jun-04-19 07:49	Jun-04-19 08:08	Jun-04-19 08:28
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	46.1 15.0	<15.0 15.0	24.3 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	46.1 15.0	<15.0 15.0	24.3 15.0	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	46.1 15.0	<15.0 15.0	24.3 15.0	<15.0 15.0

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 626234



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **SW04**
Lab Sample Id: 626234-001

Matrix: Soil
Date Collected: 05.29.19 09.45

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.7	4.95	mg/kg	06.04.19 01.18		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091047

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 06.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 06.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 06.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 06.11	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 06.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	06.04.19 06.11	
o-Terphenyl	84-15-1	97	%	70-135	06.04.19 06.11	



Certificate of Analytical Results 626234



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **SW04**
Lab Sample Id: 626234-001

Matrix: Soil
Date Collected: 05.29.19 09.45

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091067

Date Prep: 06.03.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.04.19 23.08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.04.19 23.08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.04.19 23.08	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.04.19 23.08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.04.19 23.08	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.04.19 23.08	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.04.19 23.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.04.19 23.08		
4-Bromofluorobenzene	460-00-4	109	%	70-130	06.04.19 23.08		



Certificate of Analytical Results 626234



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **SW05**
Lab Sample Id: 626234-002

Matrix: Soil
Date Collected: 05.29.19 09.50

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	45.7	5.00	mg/kg	06.04.19 01.28		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091047

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 07.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 07.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 07.10	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 07.10	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 07.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	06.04.19 07.10	
o-Terphenyl	84-15-1	98	%	70-135	06.04.19 07.10	



Certificate of Analytical Results 626234



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **SW05**
Lab Sample Id: 626234-002

Matrix: Soil
Date Collected: 05.29.19 09.50

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091068

Date Prep: 06.03.19 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.03.19 19.45	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.03.19 19.45	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.03.19 19.45	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.03.19 19.45	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.03.19 19.45	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.03.19 19.45	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.03.19 19.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	06.03.19 19.45		
1,4-Difluorobenzene	540-36-3	107	%	70-130	06.03.19 19.45		



Certificate of Analytical Results 626234



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **SW06**
Lab Sample Id: 626234-003

Matrix: Soil
Date Collected: 05.29.19 09.55

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	06.04.19 01.38	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091047

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 07.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	46.1	15.0	mg/kg	06.04.19 07.29		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 07.29	U	1
Total TPH	PHC635	46.1	15.0	mg/kg	06.04.19 07.29		1
Total GRO-DRO	PHC628	46.1	15.0	mg/kg	06.04.19 07.29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	06.04.19 07.29	
o-Terphenyl	84-15-1	99	%	70-135	06.04.19 07.29	



Certificate of Analytical Results 626234



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **SW06**
Lab Sample Id: 626234-003

Matrix: Soil
Date Collected: 05.29.19 09.55

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091068

Date Prep: 06.03.19 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.03.19 20.04	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.03.19 20.04	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.03.19 20.04	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.03.19 20.04	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.03.19 20.04	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.03.19 20.04	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.03.19 20.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	06.03.19 20.04		
4-Bromofluorobenzene	460-00-4	107	%	70-130	06.03.19 20.04		



Certificate of Analytical Results 626234



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **SW07**
Lab Sample Id: 626234-004

Matrix: Soil
Date Collected: 05.29.19 10.00

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.7	5.01	mg/kg	06.04.19 02.06		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091047

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 07.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 07.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 07.49	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 07.49	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 07.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.04.19 07.49	
o-Terphenyl	84-15-1	99	%	70-135	06.04.19 07.49	



Certificate of Analytical Results 626234



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **SW07**
Lab Sample Id: 626234-004

Matrix: Soil
Date Collected: 05.29.19 10.00

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091068

Date Prep: 06.03.19 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.03.19 19.26	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.03.19 19.26	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.03.19 19.26	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	06.03.19 19.26	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.03.19 19.26	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.03.19 19.26	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.03.19 19.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	06.03.19 19.26		
4-Bromofluorobenzene	460-00-4	102	%	70-130	06.03.19 19.26		



Certificate of Analytical Results 626234



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **SW08**
Lab Sample Id: 626234-005

Matrix: Soil
Date Collected: 05.29.19 10.10

Date Received: 06.03.19 07.35
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	29.1	4.98	mg/kg	06.04.19 02.16		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091047

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 08.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	24.3	15.0	mg/kg	06.04.19 08.08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 08.08	U	1
Total TPH	PHC635	24.3	15.0	mg/kg	06.04.19 08.08		1
Total GRO-DRO	PHC628	24.3	15.0	mg/kg	06.04.19 08.08		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	06.04.19 08.08	
o-Terphenyl	84-15-1	98	%	70-135	06.04.19 08.08	



Certificate of Analytical Results 626234



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **SW08**
Lab Sample Id: 626234-005

Matrix: Soil
Date Collected: 05.29.19 10.10

Date Received: 06.03.19 07.35
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091068

Date Prep: 06.03.19 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.03.19 20.23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.03.19 20.23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.03.19 20.23	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.03.19 20.23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.03.19 20.23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.03.19 20.23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.03.19 20.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	123	%	70-130	06.03.19 20.23		
1,4-Difluorobenzene	540-36-3	104	%	70-130	06.03.19 20.23		



Certificate of Analytical Results 626234



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **SW09**
Lab Sample Id: 626234-006

Matrix: Soil
Date Collected: 05.29.19 10.15

Date Received: 06.03.19 07.35
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	06.04.19 02.45	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091047

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 08.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 08.28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 08.28	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 08.28	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 08.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.04.19 08.28	
o-Terphenyl	84-15-1	99	%	70-135	06.04.19 08.28	



Certificate of Analytical Results 626234



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **SW09**
Lab Sample Id: 626234-006

Matrix: Soil
Date Collected: 05.29.19 10.15

Date Received: 06.03.19 07.35
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091068

Date Prep: 06.03.19 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.03.19 20.42	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.03.19 20.42	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.03.19 20.42	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.03.19 20.42	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.03.19 20.42	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.03.19 20.42	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.03.19 20.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	06.03.19 20.42		
4-Bromofluorobenzene	460-00-4	106	%	70-130	06.03.19 20.42		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



QC Summary 626234

LT Environmental, Inc.

PLU 320H

Analytical Method: Chloride by EPA 300

Seq Number: 3091018

MB Sample Id: 7679075-1-BLK

Matrix: Solid

LCS Sample Id: 7679075-1-BKS

Prep Method: E300P

Date Prep: 06.03.19

LCSD Sample Id: 7679075-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	239	96	239	96	90-110	0	20	mg/kg	06.03.19 23:05	

Analytical Method: Chloride by EPA 300

Seq Number: 3091018

Parent Sample Id: 626234-003

Matrix: Soil

MS Sample Id: 626234-003 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626234-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.850	248	261	105	261	105	90-110	0	20	mg/kg	06.04.19 01:47	

Analytical Method: Chloride by EPA 300

Seq Number: 3091018

Parent Sample Id: 626272-001

Matrix: Soil

MS Sample Id: 626272-001 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626272-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	755	250	992	95	991	94	90-110	0	20	mg/kg	06.03.19 23:33	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091047

MB Sample Id: 7679159-1-BLK

Matrix: Solid

LCS Sample Id: 7679159-1-BKS

Prep Method: TX1005P

Date Prep: 06.03.19

LCSD Sample Id: 7679159-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1110	111	1140	114	70-135	3	20	mg/kg	06.04.19 05:32	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	1070	107	70-135	3	20	mg/kg	06.04.19 05:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		126		129		70-135	%	06.04.19 05:32
o-Terphenyl	104		110		111		70-135	%	06.04.19 05:32

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



QC Summary 626234

LT Environmental, Inc.

PLU 320H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091047

Parent Sample Id: 626234-001

Matrix: Soil

MS Sample Id: 626234-001 S

Prep Method: TX1005P

Date Prep: 06.03.19

MSD Sample Id: 626234-001 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)	<7.99	999	1150	115	1150	115	70-135	0	20	mg/kg	06.04.19 06:30	
Diesel Range Organics (DRO)	8.26	999	1080	107	1080	107	70-135	0	20	mg/kg	06.04.19 06:30	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		126		70-135	%	06.04.19 06:30
o-Terphenyl	116		117		70-135	%	06.04.19 06:30

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091067

MB Sample Id: 7679178-1-BLK

Matrix: Solid

LCS Sample Id: 7679178-1-BKS

Prep Method: SW5030B

Date Prep: 06.03.19

LCSD Sample Id: 7679178-1-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	0.0984	98	0.0988	99	70-130	0	35	mg/kg	06.04.19 02:33	
Toluene	<0.000456	0.100	0.0938	94	0.0934	94	70-130	0	35	mg/kg	06.04.19 02:33	
Ethylbenzene	<0.000565	0.100	0.102	102	0.0995	100	70-130	2	35	mg/kg	06.04.19 02:33	
m,p-Xylenes	<0.00101	0.200	0.207	104	0.202	101	70-130	2	35	mg/kg	06.04.19 02:33	
o-Xylene	<0.000344	0.100	0.101	101	0.102	102	70-130	1	35	mg/kg	06.04.19 02:33	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		99		102		70-130	%	06.04.19 02:33
4-Bromofluorobenzene	81		96		103		70-130	%	06.04.19 02:33

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091068

MB Sample Id: 7679180-1-BLK

Matrix: Solid

LCS Sample Id: 7679180-1-BKS

Prep Method: SW5030B

Date Prep: 06.03.19

LCSD Sample Id: 7679180-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.0987	99	0.105	105	70-130	6	35	mg/kg	06.03.19 17:33	
Toluene	<0.00198	0.0992	0.0947	95	0.0980	98	70-130	3	35	mg/kg	06.03.19 17:33	
Ethylbenzene	<0.00198	0.0992	0.0991	100	0.103	103	70-130	4	35	mg/kg	06.03.19 17:33	
m,p-Xylenes	<0.00397	0.198	0.199	101	0.204	102	70-130	2	35	mg/kg	06.03.19 17:33	
o-Xylene	<0.00198	0.0992	0.0967	97	0.0993	99	70-130	3	35	mg/kg	06.03.19 17:33	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		100		100		70-130	%	06.03.19 17:33
4-Bromofluorobenzene	100		94		92		70-130	%	06.03.19 17:33

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



QC Summary 626234

LT Environmental, Inc. PLU 320H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091067

Parent Sample Id: 626231-003

Matrix: Soil

MS Sample Id: 626231-003 S

Prep Method: SW5030B

Date Prep: 06.03.19

MSD Sample Id: 626231-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000474	0.0996	0.0955	95	0.0949	94	70-130	1	35	mg/kg	06.04.19 03:11	
Toluene	<0.000454	0.0996	0.0906	91	0.0900	90	70-130	1	35	mg/kg	06.04.19 03:11	
Ethylbenzene	<0.000563	0.0996	0.0978	98	0.0971	97	70-130	1	35	mg/kg	06.04.19 03:11	
m,p-Xylenes	<0.00101	0.199	0.198	99	0.196	98	70-130	1	35	mg/kg	06.04.19 03:11	
o-Xylene	0.000343	0.0996	0.0980	98	0.0973	97	70-130	1	35	mg/kg	06.04.19 03:11	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		102		70-130	%	06.04.19 03:11
4-Bromofluorobenzene	103		104		70-130	%	06.04.19 03:11

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091068

Parent Sample Id: 626234-004

Matrix: Soil

MS Sample Id: 626234-004 S

Prep Method: SW5030B

Date Prep: 06.03.19

MSD Sample Id: 626234-004 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	0.0958	96	0.0979	98	70-130	2	35	mg/kg	06.03.19 18:11	
Toluene	<0.00199	0.0996	0.0888	89	0.0933	93	70-130	5	35	mg/kg	06.03.19 18:11	
Ethylbenzene	<0.00199	0.0996	0.0921	92	0.0960	96	70-130	4	35	mg/kg	06.03.19 18:11	
m,p-Xylenes	<0.00398	0.199	0.183	92	0.191	96	70-130	4	35	mg/kg	06.03.19 18:11	
o-Xylene	<0.00199	0.0996	0.0903	91	0.0945	95	70-130	5	35	mg/kg	06.03.19 18:11	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		102		70-130	%	06.03.19 18:11
4-Bromofluorobenzene	100		100		70-130	%	06.03.19 18:11

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

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

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

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



Chain of Custody

Work Order No: 10246234

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 820-2000

www.xenco.com Page 1 of 1

Project Manager:	Ashley Ager	Bill to: (if different)	Kyle Little
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO-Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432.704.5178	Email:	ager@ltenv.com mcalfee@ltenv.com

Work Order Comments	
Program: UST/PST	☐ PRP ☐ Brownfields ☐ RC ☐ Superfund
State of Project:	
Reporting Level II	☐ Level III ☐ ST/UST ☐ PRP ☐ Level IV
Deliverables: EDD	☐ ADAPT ☐ Other:

Project Name:	PLU 3204	Turn Around		ANALYSIS REQUEST	Work Order Notes
Project Number:	2RP-5326	Routine ☐			
P.O. Number:		Rush: 24hr			
Sampler's Name:	Robert McAlfee	Due Date:			

SAMPLE RECEIPT		Temp Blank:	Yes ☒ No ☐	Well Ice:	Yes ☒ No ☐
Temperature (°C):	0.5/0.3	Thermometer ID:	22		
Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.2		
Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:			
Sample Custody Seals:	Yes ☒ No ☐				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)																	Sample Comments
SW04	S	05/29/19	0945	0-4'	1	X	X	X																	Remnant
SW05			0950	0-4'		X	X	X																	
SW06			0955	0-4'		X	X	X																	
SW07			1000	0-4'		X	X	X																	
SW08			1010	0-3'		X	X	X																	
SW09			1015	0-3'		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
		05-31-19 10:10			06-13-19
					0735

ORIGIN ID: CACA
 SAMPLE CUSTODY
 SAMPLE CUSTODY
 1089 N CANAL ST
 CARLSBAD NM 88220
 UNITED STATES US

SHIP DATE: 31MAY19
 ACTWTG: 48.00 LB
 CAD: 114488676/NET/4100
 DIMS: 24x13x13 IN
 BILL SENDER

TO **SAMPLE RECEIVING MIDLAND**

**FEDEx OFFICE PRINT & SHIP CENTER
 FEDEx OFFICE PRINT & SHIP CENTER
 200 W INTERSTATE 20**

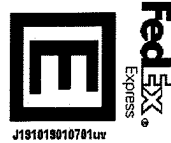
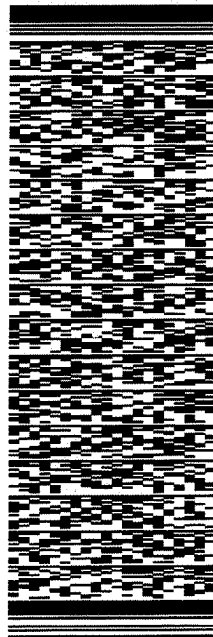
MIDLAND TX 79701

(432) 704-5440

REF:

PO:

DEPT:



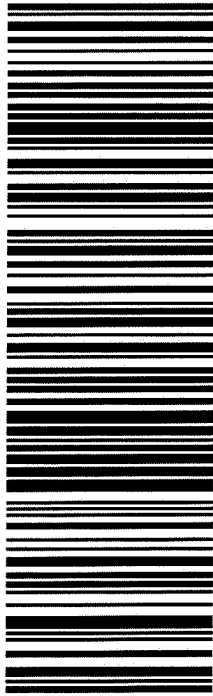
J191019010701LW

TRK# 7753 6207 1739
 0201

**SATURDAY HOLD
 PRIORITY OVERNIGHT**

41 MAFA

HLD
 MAFKI
 LBB
 TX-US



5.5/5.1

565J1/D66C/23AD

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/03/2019 07:35:00 AM

Work Order #: 626234

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/03/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/03/2019

Analytical Report 626238

for
LT Environmental, Inc.

Project Manager: Ashley Ager

PLU 320 H

04-JUN-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

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

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

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



04-JUN-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **626238**

PLU 320 H

Project Address: Delaware Basin

Ashley Ager:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 626238. 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. 626238 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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Sample Cross Reference 626238



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW11	S	05-30-19 11:50	0 - 2 ft	626238-001
SW12	S	05-30-19 12:00	0 - 4 ft	626238-002
SW13	S	05-30-19 12:10	0 - 4 ft	626238-003
SW14	S	05-30-19 12:20	0 - 4 ft	626238-004



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 320 H*

Project ID:
Work Order Number(s): 626238

Report Date: 04-JUN-19
Date Received: 06/03/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3090977 BTEX by EPA 8021B

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

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 626238-004.



Certificate of Analysis Summary 626238

LT Environmental, Inc., Arvada, CO

Project Name: PLU 320 H



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Mon Jun-03-19 07:35 am

Report Date: 04-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626238-001	626238-002	626238-003	626238-004		
	Field Id:	SW11	SW12	SW13	SW14		
	Depth:	0-2 ft	0-4 ft	0-4 ft	0-4 ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	May-30-19 11:50	May-30-19 12:00	May-30-19 12:10	May-30-19 12:20		
BTEX by EPA 8021B	Extracted:	Jun-03-19 17:00	Jun-03-19 17:00	Jun-03-19 17:00	Jun-03-19 17:00		
	Analyzed:	Jun-04-19 05:10	Jun-04-19 05:29	Jun-04-19 05:48	Jun-04-19 06:07		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202		
Toluene		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202		
Ethylbenzene		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202		
m,p-Xylenes		<0.00402 0.00402	<0.00402 0.00402	<0.00400 0.00400	<0.00403 0.00403		
o-Xylene		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202		
Total Xylenes		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202		
Total BTEX		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202		
Chloride by EPA 300	Extracted:	Jun-03-19 16:45	Jun-03-19 16:45	Jun-03-19 16:45	Jun-03-19 16:45		
	Analyzed:	Jun-03-19 18:49	Jun-03-19 19:04	Jun-03-19 19:10	Jun-03-19 19:15		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		307 5.03	394 4.96	<5.00 5.00	<4.98 4.98		
TPH by SW8015 Mod	Extracted:	Jun-03-19 09:00	Jun-03-19 09:00	Jun-03-19 09:00	Jun-03-19 09:00		
	Analyzed:	Jun-03-19 18:28	Jun-03-19 18:49	Jun-03-19 19:10	Jun-03-19 19:31		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		<15.0 15.0	27.3 15.0	<15.0 15.0	<15.0 15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total TPH		<15.0 15.0	27.3 15.0	<15.0 15.0	<15.0 15.0		
Total GRO-DRO		<15.0 15.0	27.3 15.0	<15.0 15.0	<15.0 15.0		

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 626238



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **SW11**
Lab Sample Id: 626238-001

Matrix: Soil
Date Collected: 05.30.19 11.50

Date Received: 06.03.19 07.35
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091027

Date Prep: 06.03.19 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	307	5.03	mg/kg	06.03.19 18.49		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091045

Date Prep: 06.03.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.03.19 18.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.03.19 18.28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.03.19 18.28	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.03.19 18.28	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.03.19 18.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	06.03.19 18.28	
o-Terphenyl	84-15-1	88	%	70-135	06.03.19 18.28	



Certificate of Analytical Results 626238



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **SW11**
Lab Sample Id: 626238-001

Matrix: Soil
Date Collected: 05.30.19 11.50

Date Received: 06.03.19 07.35
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090977

Date Prep: 06.03.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.04.19 05.10	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.04.19 05.10	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.04.19 05.10	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.04.19 05.10	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.04.19 05.10	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.04.19 05.10	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.04.19 05.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	06.04.19 05.10		
1,4-Difluorobenzene	540-36-3	103	%	70-130	06.04.19 05.10		



Certificate of Analytical Results 626238



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **SW12**
Lab Sample Id: 626238-002

Matrix: Soil
Date Collected: 05.30.19 12.00

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091027

Date Prep: 06.03.19 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	394	4.96	mg/kg	06.03.19 19.04		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091045

Date Prep: 06.03.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.03.19 18.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	27.3	15.0	mg/kg	06.03.19 18.49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.03.19 18.49	U	1
Total TPH	PHC635	27.3	15.0	mg/kg	06.03.19 18.49		1
Total GRO-DRO	PHC628	27.3	15.0	mg/kg	06.03.19 18.49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	06.03.19 18.49	
o-Terphenyl	84-15-1	102	%	70-135	06.03.19 18.49	



Certificate of Analytical Results 626238



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **SW12**
Lab Sample Id: 626238-002

Matrix: Soil
Date Collected: 05.30.19 12.00

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090977

Date Prep: 06.03.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.04.19 05.29	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.04.19 05.29	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.04.19 05.29	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.04.19 05.29	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.04.19 05.29	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.04.19 05.29	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.04.19 05.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.04.19 05.29		
4-Bromofluorobenzene	460-00-4	124	%	70-130	06.04.19 05.29		



Certificate of Analytical Results 626238



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **SW13**
Lab Sample Id: 626238-003

Matrix: Soil
Date Collected: 05.30.19 12.10

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091027

Date Prep: 06.03.19 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	06.03.19 19.10	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091045

Date Prep: 06.03.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.03.19 19.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.03.19 19.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.03.19 19.10	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.03.19 19.10	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.03.19 19.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	06.03.19 19.10	
o-Terphenyl	84-15-1	89	%	70-135	06.03.19 19.10	



Certificate of Analytical Results 626238



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **SW13**
Lab Sample Id: 626238-003

Matrix: Soil
Date Collected: 05.30.19 12.10

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090977

Date Prep: 06.03.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.04.19 05.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.04.19 05.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.04.19 05.48	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.04.19 05.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.04.19 05.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.04.19 05.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.04.19 05.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	130	%	70-130	06.04.19 05.48		
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.04.19 05.48		



Certificate of Analytical Results 626238



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **SW14**
Lab Sample Id: 626238-004

Matrix: Soil
Date Collected: 05.30.19 12.20

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091027

Date Prep: 06.03.19 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	06.03.19 19.15	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091045

Date Prep: 06.03.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.03.19 19.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.03.19 19.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.03.19 19.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.03.19 19.31	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.03.19 19.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	06.03.19 19.31	
o-Terphenyl	84-15-1	97	%	70-135	06.03.19 19.31	



Certificate of Analytical Results 626238



LT Environmental, Inc., Arvada, CO

PLU 320 H

Sample Id: **SW14**
Lab Sample Id: 626238-004

Matrix: Soil
Date Collected: 05.30.19 12.20

Date Received: 06.03.19 07.35
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090977

Date Prep: 06.03.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.04.19 06.07	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.04.19 06.07	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.04.19 06.07	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	06.04.19 06.07	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.04.19 06.07	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.04.19 06.07	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.04.19 06.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	140	%	70-130	06.04.19 06.07	**	
1,4-Difluorobenzene	540-36-3	103	%	70-130	06.04.19 06.07		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 626238

LT Environmental, Inc. PLU 320 H

Analytical Method: Chloride by EPA 300

Seq Number: 3091027

MB Sample Id: 7679088-1-BLK

Matrix: Solid

LCS Sample Id: 7679088-1-BKS

Prep Method: E300P

Date Prep: 06.03.19

LCSD Sample Id: 7679088-1-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	238	95	237	95	90-110	0	20	mg/kg	06.03.19 18:39	

Analytical Method: Chloride by EPA 300

Seq Number: 3091027

Parent Sample Id: 626230-006

Matrix: Soil

MS Sample Id: 626230-006 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626230-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.16	250	282	111	281	110	90-110	0	20	mg/kg	06.03.19 20:06	X

Analytical Method: Chloride by EPA 300

Seq Number: 3091027

Parent Sample Id: 626238-001

Matrix: Soil

MS Sample Id: 626238-001 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626238-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	307	252	566	103	566	103	90-110	0	20	mg/kg	06.03.19 18:54	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091045

MB Sample Id: 7679157-1-BLK

Matrix: Solid

LCS Sample Id: 7679157-1-BKS

Prep Method: TX1005P

Date Prep: 06.03.19

LCSD Sample Id: 7679157-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1060	106	1080	108	70-135	2	20	mg/kg	06.03.19 11:19	
Diesel Range Organics (DRO)	<8.13	1000	983	98	1010	101	70-135	3	20	mg/kg	06.03.19 11:19	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		122		124		70-135	%	06.03.19 11:19
o-Terphenyl	101		121		115		70-135	%	06.03.19 11:19

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

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

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

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



QC Summary 626238

LT Environmental, Inc.

PLU 320 H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091045

Parent Sample Id: 626236-001

Matrix: Soil

MS Sample Id: 626236-001 S

Prep Method: TX1005P

Date Prep: 06.03.19

MSD Sample Id: 626236-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	9.10	999	1080	107	1090	108	70-135	1	20	mg/kg	06.03.19 12:18	
Diesel Range Organics (DRO)	14.0	999	1020	101	1040	103	70-135	2	20	mg/kg	06.03.19 12:18	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		127		70-135	%	06.03.19 12:18
o-Terphenyl	116		114		70-135	%	06.03.19 12:18

Analytical Method: BTEX by EPA 8021B

Seq Number: 3090977

MB Sample Id: 7679113-1-BLK

Matrix: Solid

LCS Sample Id: 7679113-1-BKS

Prep Method: SW5030B

Date Prep: 06.03.19

LCSD Sample Id: 7679113-1-BSL

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0992	99	0.104	105	70-130	5	35	mg/kg	06.03.19 17:33	
Toluene	<0.00200	0.0998	0.0952	95	0.0972	98	70-130	2	35	mg/kg	06.03.19 17:33	
Ethylbenzene	<0.00200	0.0998	0.0997	100	0.102	103	70-130	2	35	mg/kg	06.03.19 17:33	
m,p-Xylenes	<0.00399	0.200	0.200	100	0.202	102	70-130	1	35	mg/kg	06.03.19 17:33	
o-Xylene	<0.00200	0.0998	0.0973	97	0.0985	99	70-130	1	35	mg/kg	06.03.19 17:33	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		100		100		70-130	%	06.03.19 17:33
4-Bromofluorobenzene	100		94		92		70-130	%	06.03.19 17:33

Analytical Method: BTEX by EPA 8021B

Seq Number: 3090977

Parent Sample Id: 626238-001

Matrix: Soil

MS Sample Id: 626238-001 S

Prep Method: SW5030B

Date Prep: 06.03.19

MSD Sample Id: 626238-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0996	0.0934	94	0.0893	90	70-130	4	35	mg/kg	06.04.19 03:56	
Toluene	<0.000454	0.0996	0.0922	93	0.0880	89	70-130	5	35	mg/kg	06.04.19 03:56	
Ethylbenzene	<0.000563	0.0996	0.0895	90	0.0871	88	70-130	3	35	mg/kg	06.04.19 03:56	
m,p-Xylenes	<0.00101	0.199	0.181	91	0.175	88	70-130	3	35	mg/kg	06.04.19 03:56	
o-Xylene	0.000413	0.0996	0.0975	97	0.0941	94	70-130	4	35	mg/kg	06.04.19 03:56	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		98		70-130	%	06.04.19 03:56
4-Bromofluorobenzene	103		105		70-130	%	06.04.19 03:56

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

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) 995-2449 Lubbock, TX (806) 764-4000

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Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Toronto, ON (416-593-2660)

Page 1 of 1
www.xenco.com

Project Manager:		Ashley Ager		Bill to: (if different)		Kyle Littlel	
Company Name:		LT Environmental, Inc., Permian office		Company Name:		XTO-Energy	
Address:		3300 North A Street		Address:			
City, State ZIP:		Midland, TX 79705		City, State ZIP:		Carlsbad, NM	
Phone:		432.704.5178		Email:		gaager@ltenv.com micalfee@ltenv.com	

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

Project Name:	FLU 3204	Turn Around	ANALYSIS REQUEST										Work Order Notes
Project Number:			Routine	☐									
P.O. Number:	2RP-5326		Rush:	24hr									
Sampler's Name:	Robert McAlfee		Due Date:										

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	0.5/0.3				Thermometer ID	100	
Received intact:	Yes	No					
Cooler Custody Seals:	Yes	No			Correction Factor:	0.2	
Sample Custody Seals:	Yes	No			Total Containers:		

Number of Containers

A 8015)

PA 0=8021)

(EPA 300.0)

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EP)	BTEX (E)	Chloride	Sample Comments
SW11	5	06/30/19	1150	0-2'	1	X	X	X	Composite ↓
SW12			1200	0-4'		X	X	X	
SW13			1210	0-4'		X	X	X	
SW14			1220	0-4'		X	X	X	

Total 200.7 / 6010 200.8 / 6020:

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

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
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 \$76.00 will be applied to each project and a charge of \$6 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
<i>[Signature]</i>	<i>[Signature]</i>	05-31-17 10:12		<i>[Signature]</i>	06/01/19
					07/25

ORIGIN ID:CAOA (281) 240-4200
 SAMPLE CUSTODY
 SAMPLE CUSTODY
 1089 N CANAL ST
 CARLSBAD, NM 88220
 UNITED STATES US

SHIP DATE: 31MAY19
 ACTWGT: 48.00 LB
 CAD: 114488676IN/ET4100
 DIMS: 24x13x13 IN
 BILL SENDER

TO **SAMPLE RECEIVING MIDLAND**
FEDEX OFFICE PRINT & SHIP CENTER
FEDEX OFFICE PRINT & SHIP CENTER
200 W INTERSTATE 20

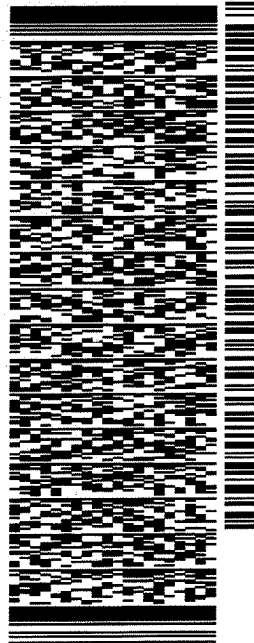
MIDLAND TX 79701

(432) 704-5440

REF:

PO:

DEPT:

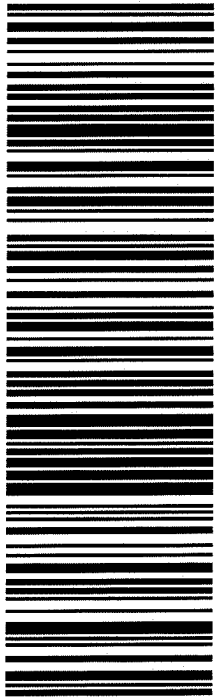


TRK# 7753 6207 1739
 0201

SATURDAY HOLD
PRIORITY OVERNIGHT

41 MAFA

HLD
 MAFKI
 LBB
 TX-US



5.5/5.1

565J1/D66C/23AD

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/03/2019 07:35:00 AM

Work Order #: 626238

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/03/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/03/2019

Analytical Report 626237

for
LT Environmental, Inc.

Project Manager: Ashley Ager

PLU 320H

04-JUN-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

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

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

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



04-JUN-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **626237**

PLU 320H

Project Address: Delaware Basin

Ashley Ager:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 626237. 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. 626237 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 626237



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS32	S	05-30-19 08:50	1 ft	626237-001
SW10	S	05-30-19 11:40	0 - 1 ft	626237-002



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 320H*

Project ID:
Work Order Number(s): 626237

Report Date: 04-JUN-19
Date Received: 06/03/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3091068 BTEX by EPA 8021B

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

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 626237-002.



Certificate of Analysis Summary 626237

LT Environmental, Inc., Arvada, CO

Project Name: PLU 320H



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Mon Jun-03-19 07:35 am

Report Date: 04-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626237-001	626237-002				
	Field Id:	FS32	SW10				
	Depth:	1- ft	0-1 ft				
	Matrix:	SOIL	SOIL				
	Sampled:	May-30-19 08:50	May-30-19 11:40				
BTEX by EPA 8021B	Extracted:	Jun-03-19 15:00	Jun-03-19 15:00				
	Analyzed:	Jun-04-19 02:03	Jun-04-19 02:22				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00200 0.00200	<0.00201 0.00201				
Toluene		<0.00200 0.00200	<0.00201 0.00201				
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201				
m,p-Xylenes		<0.00400 0.00400	<0.00402 0.00402				
o-Xylene		<0.00200 0.00200	<0.00201 0.00201				
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201				
Total BTEX		<0.00200 0.00200	<0.00201 0.00201				
Chloride by EPA 300	Extracted:	Jun-03-19 15:00	Jun-03-19 15:20				
	Analyzed:	Jun-03-19 21:48	Jun-04-19 03:42				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		90.9 5.03	73.7 25.3				
TPH by SW8015 Mod	Extracted:	Jun-03-19 15:00	Jun-03-19 15:00				
	Analyzed:	Jun-04-19 08:48	Jun-04-19 09:08				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9				
Diesel Range Organics (DRO)		<15.0 15.0	31.8 14.9				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9				
Total TPH		<15.0 15.0	31.8 14.9				
Total GRO-DRO		<15.0 15.0	31.8 14.9				

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 626237



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: FS32
Lab Sample Id: 626237-001

Matrix: Soil
Date Collected: 05.30.19 08.50

Date Received: 06.03.19 07.35
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091014

Date Prep: 06.03.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	90.9	5.03	mg/kg	06.03.19 21.48		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091047

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 08.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 08.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 08.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 08.48	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 08.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	06.04.19 08.48	
o-Terphenyl	84-15-1	90	%	70-135	06.04.19 08.48	



Certificate of Analytical Results 626237



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: FS32
Lab Sample Id: 626237-001

Matrix: Soil
Date Collected: 05.30.19 08.50

Date Received: 06.03.19 07.35
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091068

Date Prep: 06.03.19 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.04.19 02.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.04.19 02.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.04.19 02.03	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.04.19 02.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.04.19 02.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.04.19 02.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.04.19 02.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	06.04.19 02.03		
4-Bromofluorobenzene	460-00-4	115	%	70-130	06.04.19 02.03		



Certificate of Analytical Results 626237



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **SW10**
Lab Sample Id: 626237-002

Matrix: Soil
Date Collected: 05.30.19 11.40

Date Received: 06.03.19 07.35
Sample Depth: 0 - 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	73.7	25.3	mg/kg	06.04.19 03.42		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091047

Date Prep: 06.03.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.04.19 09.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	31.8	14.9	mg/kg	06.04.19 09.08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.04.19 09.08	U	1
Total TPH	PHC635	31.8	14.9	mg/kg	06.04.19 09.08		1
Total GRO-DRO	PHC628	31.8	14.9	mg/kg	06.04.19 09.08		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.04.19 09.08	
o-Terphenyl	84-15-1	100	%	70-135	06.04.19 09.08	



Certificate of Analytical Results 626237



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **SW10**
Lab Sample Id: 626237-002

Matrix: Soil
Date Collected: 05.30.19 11.40

Date Received: 06.03.19 07.35
Sample Depth: 0 - 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091068

Date Prep: 06.03.19 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.04.19 02.22	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.04.19 02.22	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.04.19 02.22	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.04.19 02.22	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.04.19 02.22	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.04.19 02.22	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.04.19 02.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	129	%	70-130	06.04.19 02.22		
4-Bromofluorobenzene	460-00-4	159	%	70-130	06.04.19 02.22	**	

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 626237

LT Environmental, Inc.

PLU 320H

Analytical Method: Chloride by EPA 300

Seq Number: 3091014

MB Sample Id: 7679073-1-BLK

Matrix: Solid

LCS Sample Id: 7679073-1-BKS

Prep Method: E300P

Date Prep: 06.03.19

LCSD Sample Id: 7679073-1-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	234	94	234	94	90-110	0	20	mg/kg	06.03.19 17:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3091018

MB Sample Id: 7679075-1-BLK

Matrix: Solid

LCS Sample Id: 7679075-1-BKS

Prep Method: E300P

Date Prep: 06.03.19

LCSD Sample Id: 7679075-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	239	96	239	96	90-110	0	20	mg/kg	06.03.19 23:05	

Analytical Method: Chloride by EPA 300

Seq Number: 3091014

Parent Sample Id: 626232-002

Matrix: Soil

MS Sample Id: 626232-002 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626232-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8.83	252	268	103	268	103	90-110	0	20	mg/kg	06.03.19 18:17	

Analytical Method: Chloride by EPA 300

Seq Number: 3091014

Parent Sample Id: 626248-005

Matrix: Soil

MS Sample Id: 626248-005 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626248-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<1.04	302	308	102	310	102	90-110	1	20	mg/kg	06.03.19 20:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3091018

Parent Sample Id: 626234-003

Matrix: Soil

MS Sample Id: 626234-003 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626234-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.850	248	261	105	261	105	90-110	0	20	mg/kg	06.04.19 01:47	

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



QC Summary 626237

LT Environmental, Inc.

PLU 320H

Analytical Method: Chloride by EPA 300

Seq Number: 3091018

Parent Sample Id: 626272-001

Matrix: Soil

MS Sample Id: 626272-001 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626272-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	755	250	992	95	991	94	90-110	0	20	mg/kg	06.03.19 23:33	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091047

MB Sample Id: 7679159-1-BLK

Matrix: Solid

LCS Sample Id: 7679159-1-BKS

Prep Method: TX1005P

Date Prep: 06.03.19

LCSD Sample Id: 7679159-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1110	111	1140	114	70-135	3	20	mg/kg	06.04.19 05:32	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	1070	107	70-135	3	20	mg/kg	06.04.19 05:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		126		129		70-135	%	06.04.19 05:32
o-Terphenyl	104		110		111		70-135	%	06.04.19 05:32

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091047

Parent Sample Id: 626234-001

Matrix: Soil

MS Sample Id: 626234-001 S

Prep Method: TX1005P

Date Prep: 06.03.19

MSD Sample Id: 626234-001 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)	<7.99	999	1150	115	1150	115	70-135	0	20	mg/kg	06.04.19 06:30	
Diesel Range Organics (DRO)	8.26	999	1080	107	1080	107	70-135	0	20	mg/kg	06.04.19 06:30	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		126		70-135	%	06.04.19 06:30
o-Terphenyl	116		117		70-135	%	06.04.19 06:30

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 320H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091068

MB Sample Id: 7679180-1-BLK

Matrix: Solid

LCS Sample Id: 7679180-1-BKS

Prep Method: SW5030B

Date Prep: 06.03.19

LCSD Sample Id: 7679180-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.0987	99	0.105	105	70-130	6	35	mg/kg	06.03.19 17:33	
Toluene	<0.00198	0.0992	0.0947	95	0.0980	98	70-130	3	35	mg/kg	06.03.19 17:33	
Ethylbenzene	<0.00198	0.0992	0.0991	100	0.103	103	70-130	4	35	mg/kg	06.03.19 17:33	
m,p-Xylenes	<0.00397	0.198	0.199	101	0.204	102	70-130	2	35	mg/kg	06.03.19 17:33	
o-Xylene	<0.00198	0.0992	0.0967	97	0.0993	99	70-130	3	35	mg/kg	06.03.19 17:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		100		100		70-130	%	06.03.19 17:33
4-Bromofluorobenzene	100		94		92		70-130	%	06.03.19 17:33

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091068

Parent Sample Id: 626234-004

Matrix: Soil

MS Sample Id: 626234-004 S

Prep Method: SW5030B

Date Prep: 06.03.19

MSD Sample Id: 626234-004 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	0.0958	96	0.0979	98	70-130	2	35	mg/kg	06.03.19 18:11	
Toluene	<0.00199	0.0996	0.0888	89	0.0933	93	70-130	5	35	mg/kg	06.03.19 18:11	
Ethylbenzene	<0.00199	0.0996	0.0921	92	0.0960	96	70-130	4	35	mg/kg	06.03.19 18:11	
m,p-Xylenes	<0.00398	0.199	0.183	92	0.191	96	70-130	4	35	mg/kg	06.03.19 18:11	
o-Xylene	<0.00199	0.0996	0.0903	91	0.0945	95	70-130	5	35	mg/kg	06.03.19 18:11	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		102		70-130	%	06.03.19 18:11
4-Bromofluorobenzene	100		100		70-130	%	06.03.19 18:11

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) 509-3534
Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-4206

Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-520-3000)

www.yench.com Page 1 of 1

Project Manager:		Ashley Ager		Bill to: (if different)		Kyle Litrel	
Company Name:		LT Environmental, Inc., Permian office		Company Name:		XTO-Energy	
Address:		3300 North A Street		Address:			
City, State ZIP:		Midland, TX 79705		City, State ZIP:		Carlsbad, NM	
Phone:		432.704.5178		Email:		aager@ltenv.com rmcacfee@ltenv.com	

Work Order Comments Program: UST/PST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐ State of Project: Reporting Level II ☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV ☐ Deliverables: EDD ☐ ADAPT ☐ Other:	
--	--

Project Name:		PLV 320 H		Turn Around	
Project Number:				Routine ☐	
P.O. Number:		2RP-5326		Rush: 24 hr	
Sampler's Name:		Robert McAlfee		Due Date:	

SAMPLE RECEIPT				Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):		05103				Thermometer ID:		12	
Received Intact:		Yes		No					
Cooler Custody Seals:		Yes		No		Correction Factor:		-0.2	
Sample Custody Seals:		Yes		No		Total Containers:			

ANALYSIS REQUEST										Work Order Notes
of Containers A 8015) PA 0=8021) (EPA 300.0)										TAT starts the day received by the lab, if received by 4:30pm

Sample Identification						Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EP)	BTEX (E)	Chloride	Sample Comments									
FS32						S	05/19/19	0850	1'	1	X	X	X	<i>Handwritten signature</i> <i>Handwritten signature</i> Composite Composite									
SW10						S	05/20/19	1140	0-1'	1	X	X	X										

Total 200.7 / 6010 200.8 / 6020:

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

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 / 17470 / 7471 : Hg																															

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xorco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xorco 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 Xorco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xorco, but not analyzed. These terms will be enforced unless previously negotiated.

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	<i>[Signature]</i>		05-21-19 12:00		<i>[Signature]</i>	6/3/19
2						0735
3						
4						
5						
6						

ORIGIN ID:CAOA (281) 240-4200
 SAMPLE CUSTODY
 SAMPLE CUSTODY
 1089 N CANAL ST
 CARLSBAD, NM 88220
 UNITED STATES US

SHIP DATE: 31MAY19
 ACTWGT: 48.00 LB
 CAD: 114488676IN/ET4100
 DIMS: 24x13x13 IN
 BILL SENDER

TO **SAMPLE RECEIVING MIDLAND**
FEDEX OFFICE PRINT & SHIP CENTER
FEDEX OFFICE PRINT & SHIP CENTER
200 W INTERSTATE 20

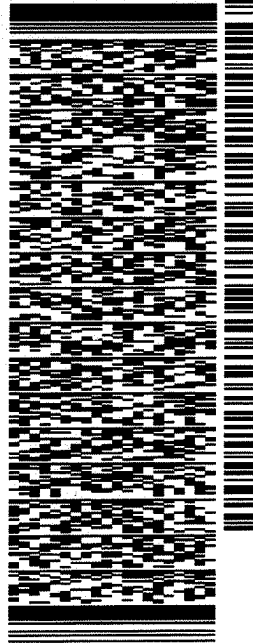
MIDLAND TX 79701

(432) 704-5440

REF:

PO:

DEPT:

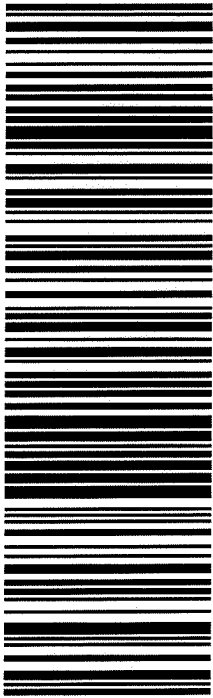


TRK# 7753 6207 1739
 0201

SATURDAY HOLD
PRIORITY OVERNIGHT

41 MAFA

HLD
 MAFKI
 LBB
 TX-US



5.5/5.1

565J1/D66C/23AD

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
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3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/03/2019 07:45:00 AM

Work Order #: 626237

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/03/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/03/2019

Analytical Report 626272

for
LT Environmental, Inc.

Project Manager: Ashley Ager

PLU 320H

05-JUN-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

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

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

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



05-JUN-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **626272**

PLU 320H

Project Address: Delaware Basin

Ashley Ager:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 626272. 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. 626272 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

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 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS33	S	05-30-19 10:15	2 ft	626272-001
FS34	S	05-30-19 10:20	4 ft	626272-002
FS35	S	05-30-19 10:25	4 ft	626272-003
FS36	S	05-30-19 10:30	1 ft	626272-004
FS37	S	05-30-19 10:35	4 ft	626272-005
FS38	S	05-30-19 10:40	4 ft	626272-006
FS39	S	05-30-19 10:50	4 ft	626272-007
FS40	S	05-30-19 10:55	4 ft	626272-008
FS41	S	05-30-19 11:00	4 ft	626272-009
FS42	S	05-30-19 11:10	4 ft	626272-010
FS43	S	05-30-19 11:15	4 ft	626272-011
FS44	S	05-30-19 11:20	4 ft	626272-012



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 320H*

Project ID:
Work Order Number(s): 626272

Report Date: 05-JUN-19
Date Received: 06/03/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3090977 BTEX by EPA 8021B

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

Batch: LBA-3091048 TPH by SW8015 Mod

Surrogate o-Terphenyl recovered below QC limits. Matrix interferences is suspected.

Samples affected are: 626272-012.

Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 626272-001,626272-003,626272-005,626272-006,626272-007,626272-009,626272-008.

Batch: LBA-3091082 BTEX by EPA 8021B

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



Certificate of Analysis Summary 626272

LT Environmental, Inc., Arvada, CO

Project Name: PLU 320H



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Mon Jun-03-19 10:53 am

Report Date: 05-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626272-001	626272-002	626272-003	626272-004	626272-005	626272-006
	Field Id:	FS33	FS34	FS35	FS36	FS37	FS38
	Depth:	2- ft	4- ft	4- ft	1- ft	4- ft	4- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	May-30-19 10:15	May-30-19 10:20	May-30-19 10:25	May-30-19 10:30	May-30-19 10:35	May-30-19 10:40
BTEX by EPA 8021B	Extracted:	Jun-03-19 17:00	Jun-03-19 17:00	Jun-03-19 17:00	Jun-03-19 17:00	Jun-03-19 17:00	Jun-03-19 17:00
	Analyzed:	Jun-04-19 10:12	Jun-04-19 10:31	Jun-04-19 10:50	Jun-04-19 11:09	Jun-04-19 11:28	Jun-04-19 11:47
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Toluene		<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
m,p-Xylenes		<0.00402 0.00402	<0.00399 0.00399	<0.00403 0.00403	<0.00398 0.00398	<0.00401 0.00401	<0.00398 0.00398
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Total BTEX		<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Chloride by EPA 300	Extracted:	Jun-03-19 15:20	Jun-03-19 15:20	Jun-03-19 15:20	Jun-03-19 15:20	Jun-03-19 15:20	Jun-03-19 15:20
	Analyzed:	Jun-03-19 23:24	Jun-03-19 23:52	Jun-04-19 00:02	Jun-04-19 00:11	Jun-04-19 00:21	Jun-04-19 00:50
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		755 5.00	859 5.02	1610 24.9	<5.00 5.00	369 4.99	511 5.03
TPH by SW8015 Mod	Extracted:	Jun-03-19 17:00	Jun-03-19 17:00	Jun-03-19 17:00	Jun-03-19 17:00	Jun-03-19 17:00	Jun-03-19 17:00
	Analyzed:	Jun-03-19 23:48	Jun-04-19 00:13	Jun-04-19 00:38	Jun-04-19 01:27	Jun-04-19 01:51	Jun-04-19 02:16
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 626272

LT Environmental, Inc., Arvada, CO

Project Name: PLU 320H



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Mon Jun-03-19 10:53 am

Report Date: 05-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626272-007		626272-008		626272-009		626272-010		626272-011		626272-012	
	Field Id:	FS39		FS40		FS41		FS42		FS43		FS44	
	Depth:	4- ft		4- ft		4- ft		4- ft		4- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-30-19 10:50		May-30-19 10:55		May-30-19 11:00		May-30-19 11:10		May-30-19 11:15		May-30-19 11:20	
BTEX by EPA 8021B	Extracted:	Jun-03-19 17:15		Jun-03-19 17:15		Jun-03-19 17:15		Jun-03-19 17:15		Jun-03-19 17:15		Jun-03-19 17:15	
	Analyzed:	Jun-04-19 17:21		Jun-04-19 17:42		Jun-04-19 14:36		Jun-04-19 14:57		Jun-04-19 15:17		Jun-04-19 15:38	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201
Toluene		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201
Ethylbenzene		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201
m,p-Xylenes		<0.00402	0.00402	<0.00399	0.00399	<0.00403	0.00403	<0.00398	0.00398	<0.00401	0.00401	<0.00402	0.00402
o-Xylene		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201
Total Xylenes		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201
Total BTEX		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201
Chloride by EPA 300	Extracted:	Jun-03-19 15:20		Jun-03-19 15:20		Jun-03-19 15:00		Jun-03-19 15:00		Jun-03-19 15:00		Jun-03-19 15:00	
	Analyzed:	Jun-04-19 00:59		Jun-04-19 01:09		Jun-03-19 21:57		Jun-03-19 22:07		Jun-03-19 22:17		Jun-03-19 22:26	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		14.0	5.00	<4.96	4.96	<4.98	4.98	<5.00	5.00	<5.04	5.04	<4.99	4.99
TPH by SW8015 Mod	Extracted:	Jun-03-19 17:00		Jun-03-19 17:00		Jun-03-19 17:00		Jun-03-19 17:00		Jun-03-19 17:00		Jun-03-19 17:00	
	Analyzed:	Jun-04-19 02:40		Jun-04-19 03:05		Jun-04-19 03:29		Jun-04-19 03:53		Jun-04-19 04:17		Jun-04-19 04:41	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: FS33
Lab Sample Id: 626272-001

Matrix: Soil
Date Collected: 05.30.19 10.15

Date Received: 06.03.19 10.53
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	755	5.00	mg/kg	06.03.19 23.24		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.03.19 23.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.03.19 23.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.03.19 23.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.03.19 23.48	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.03.19 23.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	136	%	70-135	06.03.19 23.48	**
o-Terphenyl	84-15-1	120	%	70-135	06.03.19 23.48	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: FS33
Lab Sample Id: 626272-001

Matrix: Soil
Date Collected: 05.30.19 10.15

Date Received: 06.03.19 10.53
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090977

Date Prep: 06.03.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.04.19 10.12	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.04.19 10.12	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.04.19 10.12	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.04.19 10.12	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.04.19 10.12	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.04.19 10.12	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.04.19 10.12	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		109	%	70-130	06.04.19 10.12	
4-Bromofluorobenzene	460-00-4		108	%	70-130	06.04.19 10.12	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS34**
Lab Sample Id: 626272-002

Matrix: Soil
Date Collected: 05.30.19 10.20

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	859	5.02	mg/kg	06.03.19 23.52		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 00.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 00.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 00.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 00.13	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 00.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	132	%	70-135	06.04.19 00.13	
o-Terphenyl	84-15-1	107	%	70-135	06.04.19 00.13	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS34**
Lab Sample Id: 626272-002

Matrix: Soil
Date Collected: 05.30.19 10.20

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090977

Date Prep: 06.03.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.04.19 10.31	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.04.19 10.31	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.04.19 10.31	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.04.19 10.31	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.04.19 10.31	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.04.19 10.31	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.04.19 10.31	U	1
		% Recovery					
Surrogate	Cas Number		Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	06.04.19 10.31		
4-Bromofluorobenzene	460-00-4	108	%	70-130	06.04.19 10.31		



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: FS35
Lab Sample Id: 626272-003

Matrix: Soil
Date Collected: 05.30.19 10.25

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1610	24.9	mg/kg	06.04.19 00.02		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 00.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 00.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 00.38	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 00.38	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 00.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	149	%	70-135	06.04.19 00.38	**
o-Terphenyl	84-15-1	128	%	70-135	06.04.19 00.38	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: FS35
Lab Sample Id: 626272-003

Matrix: Soil
Date Collected: 05.30.19 10.25

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090977

Date Prep: 06.03.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.04.19 10.50	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.04.19 10.50	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.04.19 10.50	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	06.04.19 10.50	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.04.19 10.50	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.04.19 10.50	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.04.19 10.50	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene		460-00-4	107	%	70-130	06.04.19 10.50	
1,4-Difluorobenzene		540-36-3	109	%	70-130	06.04.19 10.50	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS36**
Lab Sample Id: 626272-004

Matrix: Soil
Date Collected: 05.30.19 10.30

Date Received: 06.03.19 10.53
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	06.04.19 00.11	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 01.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 01.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 01.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 01.27	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 01.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	06.04.19 01.27	
o-Terphenyl	84-15-1	109	%	70-135	06.04.19 01.27	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS36**
Lab Sample Id: 626272-004

Matrix: Soil
Date Collected: 05.30.19 10.30

Date Received: 06.03.19 10.53
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090977

Date Prep: 06.03.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.04.19 11.09	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.04.19 11.09	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.04.19 11.09	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.04.19 11.09	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.04.19 11.09	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.04.19 11.09	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.04.19 11.09	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		112	%	70-130	06.04.19 11.09	
1,4-Difluorobenzene	540-36-3		107	%	70-130	06.04.19 11.09	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: FS37
Lab Sample Id: 626272-005

Matrix: Soil
Date Collected: 05.30.19 10.35

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	369	4.99	mg/kg	06.04.19 00.21		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 01.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 01.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 01.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 01.51	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 01.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	139	%	70-135	06.04.19 01.51	**
o-Terphenyl	84-15-1	130	%	70-135	06.04.19 01.51	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: FS37
Lab Sample Id: 626272-005

Matrix: Soil
Date Collected: 05.30.19 10.35

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090977

Date Prep: 06.03.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.04.19 11.28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.04.19 11.28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.04.19 11.28	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.04.19 11.28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.04.19 11.28	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.04.19 11.28	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.04.19 11.28	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		115	%	70-130	06.04.19 11.28	
1,4-Difluorobenzene	540-36-3		94	%	70-130	06.04.19 11.28	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS38**
Lab Sample Id: 626272-006

Matrix: Soil
Date Collected: 05.30.19 10.40

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	511	5.03	mg/kg	06.04.19 00.50		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 02.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 02.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 02.16	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 02.16	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 02.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	137	%	70-135	06.04.19 02.16	**
o-Terphenyl	84-15-1	130	%	70-135	06.04.19 02.16	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS38**
Lab Sample Id: 626272-006

Matrix: Soil
Date Collected: 05.30.19 10.40

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090977

Date Prep: 06.03.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.04.19 11.47	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.04.19 11.47	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.04.19 11.47	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.04.19 11.47	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.04.19 11.47	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.04.19 11.47	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.04.19 11.47	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		107	%	70-130	06.04.19 11.47	
4-Bromofluorobenzene	460-00-4		104	%	70-130	06.04.19 11.47	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS39**
Lab Sample Id: 626272-007

Matrix: Soil
Date Collected: 05.30.19 10.50

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.0	5.00	mg/kg	06.04.19 00.59		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 02.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 02.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 02.40	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 02.40	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 02.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	143	%	70-135	06.04.19 02.40	**
o-Terphenyl	84-15-1	129	%	70-135	06.04.19 02.40	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS39**
Lab Sample Id: 626272-007

Matrix: Soil
Date Collected: 05.30.19 10.50

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091082

Date Prep: 06.03.19 17.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.04.19 17.21	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.04.19 17.21	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.04.19 17.21	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.04.19 17.21	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.04.19 17.21	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.04.19 17.21	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.04.19 17.21	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene		460-00-4	104	%	70-130	06.04.19 17.21	
1,4-Difluorobenzene		540-36-3	99	%	70-130	06.04.19 17.21	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS40**
Lab Sample Id: 626272-008

Matrix: Soil
Date Collected: 05.30.19 10.55

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091018

Date Prep: 06.03.19 15.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	06.04.19 01.09	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 03.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 03.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 03.05	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 03.05	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 03.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	136	%	70-135	06.04.19 03.05	**
o-Terphenyl	84-15-1	130	%	70-135	06.04.19 03.05	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS40**
Lab Sample Id: 626272-008

Matrix: Soil
Date Collected: 05.30.19 10.55

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091082

Date Prep: 06.03.19 17.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.04.19 17.42	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.04.19 17.42	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.04.19 17.42	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.04.19 17.42	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.04.19 17.42	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.04.19 17.42	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.04.19 17.42	U	1
		% Recovery					
Surrogate	Cas Number		Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	06.04.19 17.42		
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.04.19 17.42		



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: FS41
Lab Sample Id: 626272-009

Matrix: Soil
Date Collected: 05.30.19 11.00

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091014

Date Prep: 06.03.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	06.03.19 21.57	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 03.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 03.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 03.29	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 03.29	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 03.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	140	%	70-135	06.04.19 03.29	**
o-Terphenyl	84-15-1	129	%	70-135	06.04.19 03.29	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS41**
Lab Sample Id: 626272-009

Matrix: Soil
Date Collected: 05.30.19 11.00

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091082

Prep Method: SW5030B

% Moisture:

Date Prep: 06.03.19 17.15

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.04.19 14.36	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.04.19 14.36	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.04.19 14.36	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	06.04.19 14.36	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.04.19 14.36	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.04.19 14.36	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.04.19 14.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	06.04.19 14.36		
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.04.19 14.36		



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: FS42
Lab Sample Id: 626272-010

Matrix: Soil
Date Collected: 05.30.19 11.10

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091014

Date Prep: 06.03.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	06.03.19 22.07	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 03.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 03.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 03.53	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 03.53	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 03.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	73	%	70-135	06.04.19 03.53	
o-Terphenyl	84-15-1	72	%	70-135	06.04.19 03.53	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS42**
Lab Sample Id: 626272-010

Matrix: Soil
Date Collected: 05.30.19 11.10

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091082

Date Prep: 06.03.19 17.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.04.19 14.57	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.04.19 14.57	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.04.19 14.57	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.04.19 14.57	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.04.19 14.57	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.04.19 14.57	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.04.19 14.57	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		95	%	70-130	06.04.19 14.57	
1,4-Difluorobenzene	540-36-3		96	%	70-130	06.04.19 14.57	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS43**
Lab Sample Id: 626272-011

Matrix: Soil
Date Collected: 05.30.19 11.15

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091014

Date Prep: 06.03.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.04	5.04	mg/kg	06.03.19 22.17	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 04.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 04.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 04.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 04.17	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 04.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	134	%	70-135	06.04.19 04.17	
o-Terphenyl	84-15-1	127	%	70-135	06.04.19 04.17	



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS43**
Lab Sample Id: 626272-011

Matrix: Soil
Date Collected: 05.30.19 11.15

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091082

Date Prep: 06.03.19 17.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.04.19 15.17	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.04.19 15.17	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.04.19 15.17	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.04.19 15.17	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.04.19 15.17	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.04.19 15.17	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.04.19 15.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	91	%	70-130	06.04.19 15.17		
4-Bromofluorobenzene	460-00-4	74	%	70-130	06.04.19 15.17		



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS44**
Lab Sample Id: 626272-012

Matrix: Soil
Date Collected: 05.30.19 11.20

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091014

Date Prep: 06.03.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	06.03.19 22.26	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091048

Date Prep: 06.03.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.04.19 04.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.04.19 04.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.04.19 04.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.04.19 04.41	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.04.19 04.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	74	%	70-135	06.04.19 04.41	
o-Terphenyl	84-15-1	7	%	70-135	06.04.19 04.41	**



Certificate of Analytical Results 626272



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **FS44**
Lab Sample Id: 626272-012

Matrix: Soil
Date Collected: 05.30.19 11.20

Date Received: 06.03.19 10.53
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091082

Date Prep: 06.03.19 17.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.04.19 15.38	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.04.19 15.38	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.04.19 15.38	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.04.19 15.38	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.04.19 15.38	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.04.19 15.38	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.04.19 15.38	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		100	%	70-130	06.04.19 15.38	
1,4-Difluorobenzene	540-36-3		104	%	70-130	06.04.19 15.38	

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



QC Summary 626272

LT Environmental, Inc.

PLU 320H

Analytical Method: Chloride by EPA 300

Seq Number: 3091014

MB Sample Id: 7679073-1-BLK

Matrix: Solid

LCS Sample Id: 7679073-1-BKS

Prep Method: E300P

Date Prep: 06.03.19

LCSD Sample Id: 7679073-1-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	234	94	234	94	90-110	0	20	mg/kg	06.03.19 17:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3091018

MB Sample Id: 7679075-1-BLK

Matrix: Solid

LCS Sample Id: 7679075-1-BKS

Prep Method: E300P

Date Prep: 06.03.19

LCSD Sample Id: 7679075-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	239	96	239	96	90-110	0	20	mg/kg	06.03.19 23:05	

Analytical Method: Chloride by EPA 300

Seq Number: 3091014

Parent Sample Id: 626232-002

Matrix: Soil

MS Sample Id: 626232-002 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626232-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8.83	252	268	103	268	103	90-110	0	20	mg/kg	06.03.19 18:17	

Analytical Method: Chloride by EPA 300

Seq Number: 3091014

Parent Sample Id: 626248-005

Matrix: Soil

MS Sample Id: 626248-005 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626248-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<1.04	302	308	102	310	102	90-110	1	20	mg/kg	06.03.19 20:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3091018

Parent Sample Id: 626234-003

Matrix: Soil

MS Sample Id: 626234-003 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626234-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.850	248	261	105	261	105	90-110	0	20	mg/kg	06.04.19 01:47	

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

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

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

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



QC Summary 626272

LT Environmental, Inc.

PLU 320H

Analytical Method: Chloride by EPA 300

Seq Number: 3091018

Parent Sample Id: 626272-001

Matrix: Soil

MS Sample Id: 626272-001 S

Prep Method: E300P

Date Prep: 06.03.19

MSD Sample Id: 626272-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	755	250	992	95	991	94	90-110	0	20	mg/kg	06.03.19 23:33	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091048

MB Sample Id: 7679160-1-BLK

Matrix: Solid

LCS Sample Id: 7679160-1-BKS

Prep Method: TX1005P

Date Prep: 06.03.19

LCSD Sample Id: 7679160-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1120	112	1170	117	70-135	4	20	mg/kg	06.03.19 19:12	
Diesel Range Organics (DRO)	<8.13	1000	1130	113	1190	119	70-135	5	20	mg/kg	06.03.19 19:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	80		70		129		70-135	%	06.03.19 19:12
o-Terphenyl	72		76		132		70-135	%	06.03.19 19:12

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091048

Parent Sample Id: 626240-001

Matrix: Soil

MS Sample Id: 626240-001 S

Prep Method: TX1005P

Date Prep: 06.03.19

MSD Sample Id: 626240-001 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)	495	997	1660	117	1760	127	70-135	6	20	mg/kg	06.04.19 08:20	
Diesel Range Organics (DRO)	24300	997	18600	0	22300	0	70-135	18	20	mg/kg	06.04.19 08:20	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		121		70-135	%	06.04.19 08:20
o-Terphenyl	337	**	401	**	70-135	%	06.04.19 08:20

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 320H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3090977

MB Sample Id: 7679113-1-BLK

Matrix: Solid

LCS Sample Id: 7679113-1-BKS

Prep Method: SW5030B

Date Prep: 06.03.19

LCSD Sample Id: 7679113-1-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	0.0998	0.0992	99	0.104	105	70-130	5	35	mg/kg	06.03.19 17:33	
Toluene	<0.00200	0.0998	0.0952	95	0.0972	98	70-130	2	35	mg/kg	06.03.19 17:33	
Ethylbenzene	<0.00200	0.0998	0.0997	100	0.102	103	70-130	2	35	mg/kg	06.03.19 17:33	
m,p-Xylenes	<0.00399	0.200	0.200	100	0.202	102	70-130	1	35	mg/kg	06.03.19 17:33	
o-Xylene	<0.00200	0.0998	0.0973	97	0.0985	99	70-130	1	35	mg/kg	06.03.19 17:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		100		100		70-130	%	06.03.19 17:33
4-Bromofluorobenzene	100		94		92		70-130	%	06.03.19 17:33

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091082

MB Sample Id: 7679182-1-BLK

Matrix: Solid

LCS Sample Id: 7679182-1-BKS

Prep Method: SW5030B

Date Prep: 06.03.19

LCSD Sample Id: 7679182-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000382	0.0992	0.0936	94	0.0977	97	70-130	4	35	mg/kg	06.04.19 12:29	
Toluene	<0.000452	0.0992	0.0886	89	0.0926	92	70-130	4	35	mg/kg	06.04.19 12:29	
Ethylbenzene	<0.000560	0.0992	0.0952	96	0.0984	97	70-130	3	35	mg/kg	06.04.19 12:29	
m,p-Xylenes	<0.00101	0.198	0.193	97	0.200	99	70-130	4	35	mg/kg	06.04.19 12:29	
o-Xylene	<0.000342	0.0992	0.0956	96	0.102	101	70-130	6	35	mg/kg	06.04.19 12:29	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	88		99		102		70-130	%	06.04.19 12:29
4-Bromofluorobenzene	84		96		104		70-130	%	06.04.19 12:29

Analytical Method: BTEX by EPA 8021B

Seq Number: 3090977

Parent Sample Id: 626238-001

Matrix: Soil

MS Sample Id: 626238-001 S

Prep Method: SW5030B

Date Prep: 06.03.19

MSD Sample Id: 626238-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0996	0.0934	94	0.0893	90	70-130	4	35	mg/kg	06.04.19 03:56	
Toluene	<0.000454	0.0996	0.0922	93	0.0880	89	70-130	5	35	mg/kg	06.04.19 03:56	
Ethylbenzene	<0.000563	0.0996	0.0895	90	0.0871	88	70-130	3	35	mg/kg	06.04.19 03:56	
m,p-Xylenes	<0.00101	0.199	0.181	91	0.175	88	70-130	3	35	mg/kg	06.04.19 03:56	
o-Xylene	0.000413	0.0996	0.0975	97	0.0941	94	70-130	4	35	mg/kg	06.04.19 03:56	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		98		70-130	%	06.04.19 03:56
4-Bromofluorobenzene	103		105		70-130	%	06.04.19 03:56

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



QC Summary 626272

LT Environmental, Inc. PLU 320H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091082

Parent Sample Id: 626272-009

Matrix: Soil

MS Sample Id: 626272-009 S

Prep Method: SW5030B

Date Prep: 06.03.19

MSD Sample Id: 626272-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0996	0.0892	90	0.0913	91	70-130	2	35	mg/kg	06.04.19 13:11	
Toluene	0.000686	0.0996	0.0824	82	0.0836	83	70-130	1	35	mg/kg	06.04.19 13:11	
Ethylbenzene	<0.000563	0.0996	0.0841	84	0.0842	84	70-130	0	35	mg/kg	06.04.19 13:11	
m,p-Xylenes	<0.00101	0.199	0.175	88	0.177	89	70-130	1	35	mg/kg	06.04.19 13:11	
o-Xylene	0.000373	0.0996	0.0891	89	0.0901	90	70-130	1	35	mg/kg	06.04.19 13:11	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		102		70-130	%	06.04.19 13:11
4-Bromofluorobenzene	106		108		70-130	%	06.04.19 13:11

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

Page 1 of 1

Work Order Comments

ANALYSIS REQUEST

Work Order Notes

Sample Comments

1631 / 245.1 / 7470 / 7471 : Hg

Relinquished by: (Signature)

Received by: (Signature)Date/TimeRelinquished by: (Signature)

Received by: (Signature)

DATE:

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) 565-3443 Lubbock, TX (806) 794-1296
Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta GA (770-449-8800) Tampa, FL (813)

www.xenco.com Page 2 of 2

Project Manager:	Ashley Ager		Bill to: (if different)	Kyle Littlel
Company Name:	LIT Environmental, Inc., Permian office		Company Name:	XTO-Energy
Address:	3300 North A Street		Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM	
Phone:	432.704.5178	Email:	ager@ltenv.com mcafee@ltenv.com	

Work Order Comments	
Program: UST/PST	☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:	
Reporting: level II	☐ level III ☐ ST/UST ☐ RRP ☐ level IV ☐
Deliverables: EDD	☐ ADAPT ☐ Other:

[illegible]

SAMPLE RECEIPT			
Temp Blank:	Yes	No	Wet Ice: Yes No
Temperature (°C):	Thermometer		
Received Intact:	Yes	No	
Cooler Custody Seals:	Yes	No	Correction Factor: 0.1
Sample Custody Seals:	Yes	No	Total Containers:

of Containers

A 8015)

A 0=8021)

(EPA 300.0)

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA)	BTEX (EPA)	Chloride	Sample Comments									
FGH3	S	05/30/19	1115	4'	1	X	X	X	Composite Composite									
FS44	S	05/30/19	1120	4'	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		
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 \$6 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>[Signature]</i>	<i>[Signature]</i>	05-31-19 12:12		<i>[Signature]</i>	6/3/19
3 <i>[Signature]</i>					1053
5					

ORIGIN ID: CACA (281) 240-4200
 SAMPLE CUSTODY
 XENCO LABORATORIES NM
 1089 N CANAL ST
 CARLSBAD, NM 88220
 UNITED STATES US

SHIP DATE: 31MAY19
 ACTWGT: 37.00 LB
 CAD: 1144867/6/NET4100
 DIMS: 18x14x11 IN

BILL SENDER

TO SAMPLE RECEIVING

3600 S COUNTY ROAD 1276

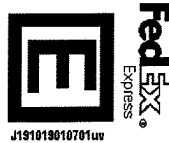
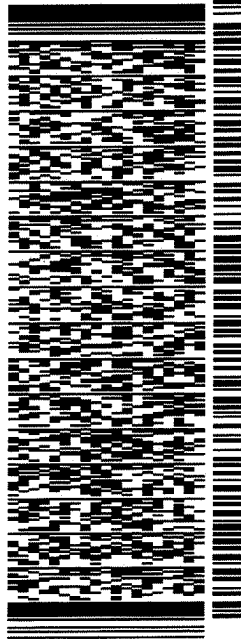
MIDLAND TX 79706

REF: (432) 704-5440

INV:

PO:

DEPT:



565J1/D66C/23AD

TRK# 7753 6211 2401
 0201

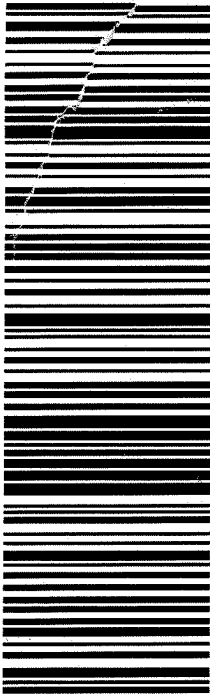
41 MAFA

TX-US

LBB 79706

HLD

MON - 03 JUN HOLD
 PRIORITY OVERNIGHT



After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/03/2019 10:53:00 AM

Work Order #: 626272

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	5.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/03/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/03/2019

Analytical Report 628029

for
LT Environmental, Inc.

Project Manager: Ashley Ager

PLU 320H

25-JUN-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

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

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

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



25-JUN-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **628029**

PLU 320H

Project Address: Delaware Basin

Ashley Ager:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 628029. 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. 628029 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

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 628029



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	06-10-19 10:40	3 ft	628029-001
BH01A	S	06-10-19 10:45	4 ft	628029-002
BH02	S	06-10-19 10:10	3 ft	628029-003
BH02A	S	06-10-19 10:15	4 ft	628029-004
BH03	S	06-10-19 10:25	3 ft	628029-005
BH03A	S	06-10-19 10:28	4 ft	628029-006
BH04	S	06-10-19 11:00	6 ft	628029-007



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 320H*

Project ID:
Work Order Number(s): 628029

Report Date: 25-JUN-19
Date Received: 06/19/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3093413 BTEX by EPA 8021B

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



Certificate of Analysis Summary 628029

LT Environmental, Inc., Arvada, CO

Project Name: PLU 320H



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Wed Jun-19-19 11:40 am

Report Date: 25-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	628029-001	628029-002	628029-003	628029-004	628029-005	628029-006
	Field Id:	BH01	BH01A	BH02	BH02A	BH03	BH03A
	Depth:	3- ft	4- ft	3- ft	4- ft	3- ft	4- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jun-10-19 10:40	Jun-10-19 10:45	Jun-10-19 10:10	Jun-10-19 10:15	Jun-10-19 10:25	Jun-10-19 10:28
BTEX by EPA 8021B	Extracted:	Jun-24-19 18:00	Jun-24-19 18:00	Jun-24-19 18:00	Jun-24-19 18:00	Jun-24-19 18:00	Jun-24-19 18:00
	Analyzed:	Jun-24-19 23:21	Jun-24-19 21:02	Jun-24-19 21:25	Jun-24-19 21:48	Jun-24-19 22:12	Jun-24-19 22:35
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
m,p-Xylenes		<0.00400 0.00400	<0.00398 0.00398	<0.00399 0.00399	<0.00400 0.00400	<0.00401 0.00401	<0.00402 0.00402
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Chloride by EPA 300	Extracted:	Jun-22-19 18:30	Jun-22-19 19:00	Jun-22-19 19:00	Jun-22-19 18:30	Jun-22-19 18:30	Jun-22-19 18:30
	Analyzed:	Jun-24-19 14:51	Jun-23-19 04:18	Jun-23-19 04:43	Jun-24-19 14:57	Jun-24-19 15:03	Jun-24-19 15:08
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		492 50.0	<5.00 5.00	<5.00 5.00	9.26 5.00	72.1 5.00	25.1 5.00
TPH by SW8015 Mod	Extracted:	Jun-24-19 11:00	Jun-24-19 11:00	Jun-23-19 09:00	Jun-23-19 09:00	Jun-23-19 09:00	Jun-23-19 09:00
	Analyzed:	Jun-24-19 13:40	Jun-24-19 14:55	Jun-23-19 21:22	Jun-23-19 21:47	Jun-23-19 22:11	Jun-23-19 22:35
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 628029

LT Environmental, Inc., Arvada, CO

Project Name: PLU 320H



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Wed Jun-19-19 11:40 am

Report Date: 25-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	628029-007					
	Field Id:	BH04					
	Depth:	6- ft					
	Matrix:	SOIL					
	Sampled:	Jun-10-19 11:00					
BTEX by EPA 8021B	Extracted:	Jun-24-19 18:00					
	Analyzed:	Jun-24-19 22:58					
	Units/RL:	mg/kg RL					
	Benzene	<0.00201 0.00201					
	Toluene	<0.00201 0.00201					
	Ethylbenzene	<0.00201 0.00201					
	m,p-Xylenes	<0.00402 0.00402					
	o-Xylene	<0.00201 0.00201					
	Total Xylenes	<0.00201 0.00201					
	Total BTEX	<0.00201 0.00201					
Chloride by EPA 300	Extracted:	Jun-22-19 19:00					
	Analyzed:	Jun-23-19 04:51					
	Units/RL:	mg/kg RL					
	Chloride	923 5.00					
TPH by SW8015 Mod	Extracted:	Jun-23-19 09:00					
	Analyzed:	Jun-23-19 23:00					
	Units/RL:	mg/kg RL					
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0					
	Diesel Range Organics (DRO)	<15.0 15.0					
	Motor Oil Range Hydrocarbons (MRO)	<15.0 15.0					
	Total TPH	<15.0 15.0					
	Total GRO-DRO	<15.0 15.0					

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.

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 628029



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **BH01**
Lab Sample Id: 628029-001

Matrix: Soil
Date Collected: 06.10.19 10.40

Date Received: 06.19.19 11.40
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093326

Date Prep: 06.22.19 18.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	492	50.0	mg/kg	06.24.19 14.51		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093435

Date Prep: 06.24.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 13.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 13.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 13.40	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 13.40	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 13.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	06.24.19 13.40	
o-Terphenyl	84-15-1	87	%	70-135	06.24.19 13.40	



Certificate of Analytical Results 628029



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **BH01**
Lab Sample Id: 628029-001

Matrix: Soil
Date Collected: 06.10.19 10.40

Date Received: 06.19.19 11.40
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3093413

Date Prep: 06.24.19 18.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.24.19 23.21	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.24.19 23.21	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.24.19 23.21	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.24.19 23.21	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.24.19 23.21	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.24.19 23.21	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.24.19 23.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	06.24.19 23.21		
1,4-Difluorobenzene	540-36-3	91	%	70-130	06.24.19 23.21		



Certificate of Analytical Results 628029



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **BH01A**
Lab Sample Id: 628029-002

Matrix: Soil
Date Collected: 06.10.19 10.45

Date Received: 06.19.19 11.40
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093325

Date Prep: 06.22.19 19.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	06.23.19 04.18	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093435

Date Prep: 06.24.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 14.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 14.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 14.55	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 14.55	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 14.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	06.24.19 14.55	
o-Terphenyl	84-15-1	90	%	70-135	06.24.19 14.55	



Certificate of Analytical Results 628029



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **BH01A**
Lab Sample Id: 628029-002

Matrix: Soil
Date Collected: 06.10.19 10.45

Date Received: 06.19.19 11.40
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3093413

Date Prep: 06.24.19 18.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.24.19 21.02	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.24.19 21.02	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.24.19 21.02	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.24.19 21.02	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.24.19 21.02	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.24.19 21.02	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.24.19 21.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	92	%	70-130	06.24.19 21.02		
4-Bromofluorobenzene	460-00-4	114	%	70-130	06.24.19 21.02		



Certificate of Analytical Results 628029



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **BH02**
Lab Sample Id: 628029-003

Matrix: Soil
Date Collected: 06.10.19 10.10

Date Received: 06.19.19 11.40
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093325

Date Prep: 06.22.19 19.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	06.23.19 04.43	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093433

Date Prep: 06.23.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 21.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 21.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 21.22	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 21.22	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 21.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	06.23.19 21.22	
o-Terphenyl	84-15-1	94	%	70-135	06.23.19 21.22	



Certificate of Analytical Results 628029



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **BH02**
Lab Sample Id: 628029-003

Matrix: Soil
Date Collected: 06.10.19 10.10

Date Received: 06.19.19 11.40
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3093413

Date Prep: 06.24.19 18.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.24.19 21.25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.24.19 21.25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.24.19 21.25	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.24.19 21.25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.24.19 21.25	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.24.19 21.25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.24.19 21.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	06.24.19 21.25		
1,4-Difluorobenzene	540-36-3	91	%	70-130	06.24.19 21.25		



Certificate of Analytical Results 628029



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **BH02A**
Lab Sample Id: 628029-004

Matrix: Soil
Date Collected: 06.10.19 10.15

Date Received: 06.19.19 11.40
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093326

Date Prep: 06.22.19 18.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.26	5.00	mg/kg	06.24.19 14.57		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093433

Date Prep: 06.23.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.23.19 21.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.23.19 21.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.23.19 21.47	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.23.19 21.47	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.23.19 21.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	06.23.19 21.47	
o-Terphenyl	84-15-1	94	%	70-135	06.23.19 21.47	



Certificate of Analytical Results 628029



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **BH02A**
Lab Sample Id: 628029-004

Matrix: Soil
Date Collected: 06.10.19 10.15

Date Received: 06.19.19 11.40
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3093413

Date Prep: 06.24.19 18.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.24.19 21.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.24.19 21.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.24.19 21.48	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.24.19 21.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.24.19 21.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.24.19 21.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.24.19 21.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	06.24.19 21.48		
1,4-Difluorobenzene	540-36-3	93	%	70-130	06.24.19 21.48		



Certificate of Analytical Results 628029



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **BH03**
Lab Sample Id: 628029-005

Matrix: Soil
Date Collected: 06.10.19 10.25

Date Received: 06.19.19 11.40
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093326

Date Prep: 06.22.19 18.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	72.1	5.00	mg/kg	06.24.19 15.03		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093433

Date Prep: 06.23.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 22.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 22.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 22.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 22.11	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 22.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	06.23.19 22.11	
o-Terphenyl	84-15-1	87	%	70-135	06.23.19 22.11	



Certificate of Analytical Results 628029



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **BH03**
Lab Sample Id: 628029-005

Matrix: Soil
Date Collected: 06.10.19 10.25

Date Received: 06.19.19 11.40
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3093413

Date Prep: 06.24.19 18.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.24.19 22.12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.24.19 22.12	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.24.19 22.12	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.24.19 22.12	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.24.19 22.12	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.24.19 22.12	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.24.19 22.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	06.24.19 22.12		
1,4-Difluorobenzene	540-36-3	93	%	70-130	06.24.19 22.12		



Certificate of Analytical Results 628029



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **BH03A**
Lab Sample Id: 628029-006

Matrix: Soil
Date Collected: 06.10.19 10.28

Date Received: 06.19.19 11.40
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093326

Date Prep: 06.22.19 18.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	25.1	5.00	mg/kg	06.24.19 15.08		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093433

Date Prep: 06.23.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 22.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 22.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 22.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 22.35	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 22.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	06.23.19 22.35	
o-Terphenyl	84-15-1	84	%	70-135	06.23.19 22.35	



Certificate of Analytical Results 628029



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **BH03A**
Lab Sample Id: 628029-006

Matrix: Soil
Date Collected: 06.10.19 10.28

Date Received: 06.19.19 11.40
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3093413

Date Prep: 06.24.19 18.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.24.19 22.35	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.24.19 22.35	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.24.19 22.35	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.24.19 22.35	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.24.19 22.35	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.24.19 22.35	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.24.19 22.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	70-130	06.24.19 22.35		
4-Bromofluorobenzene	460-00-4	117	%	70-130	06.24.19 22.35		



Certificate of Analytical Results 628029



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **BH04**
Lab Sample Id: 628029-007

Matrix: Soil
Date Collected: 06.10.19 11.00

Date Received: 06.19.19 11.40
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093325

Date Prep: 06.22.19 19.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	923	5.00	mg/kg	06.23.19 04.51		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093433

Date Prep: 06.23.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 23.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 23.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 23.00	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 23.00	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 23.00	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	92	%	70-135	06.23.19 23.00	
84-15-1	87	%	70-135	06.23.19 23.00	



Certificate of Analytical Results 628029



LT Environmental, Inc., Arvada, CO

PLU 320H

Sample Id: **BH04**
Lab Sample Id: 628029-007

Matrix: Soil
Date Collected: 06.10.19 11.00

Date Received: 06.19.19 11.40
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3093413

Date Prep: 06.24.19 18.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.24.19 22.58	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.24.19 22.58	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.24.19 22.58	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.24.19 22.58	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.24.19 22.58	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.24.19 22.58	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.24.19 22.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	91	%	70-130	06.24.19 22.58		
4-Bromofluorobenzene	460-00-4	122	%	70-130	06.24.19 22.58		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



QC Summary 628029

LT Environmental, Inc.

PLU 320H

Analytical Method: Chloride by EPA 300

Seq Number: 3093326

MB Sample Id: 7680538-1-BLK

Matrix: Solid

LCS Sample Id: 7680538-1-BKS

Prep Method: E300P

Date Prep: 06.22.19

LCSD Sample Id: 7680538-1-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	254	102	254	102	90-110	0	20	mg/kg	06.24.19 12:28	

Analytical Method: Chloride by EPA 300

Seq Number: 3093325

MB Sample Id: 7680539-1-BLK

Matrix: Solid

LCS Sample Id: 7680539-1-BKS

Prep Method: E300P

Date Prep: 06.22.19

LCSD Sample Id: 7680539-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	247	99	246	98	90-110	0	20	mg/kg	06.23.19 04:02	

Analytical Method: Chloride by EPA 300

Seq Number: 3093326

Parent Sample Id: 628554-006

Matrix: Soil

MS Sample Id: 628554-006 S

Prep Method: E300P

Date Prep: 06.22.19

MSD Sample Id: 628554-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.83	250	260	100	259	100	90-110	0	20	mg/kg	06.24.19 12:44	

Analytical Method: Chloride by EPA 300

Seq Number: 3093325

Parent Sample Id: 628029-002

Matrix: Soil

MS Sample Id: 628029-002 S

Prep Method: E300P

Date Prep: 06.22.19

MSD Sample Id: 628029-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	246	98	245	98	90-110	0	20	mg/kg	06.23.19 04:26	

Analytical Method: Chloride by EPA 300

Seq Number: 3093325

Parent Sample Id: 628188-007

Matrix: Soil

MS Sample Id: 628188-007 S

Prep Method: E300P

Date Prep: 06.22.19

MSD Sample Id: 628188-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4.86	250	260	102	261	102	90-110	0	20	mg/kg	06.23.19 06:21	

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

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

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

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



QC Summary 628029

LT Environmental, Inc.

PLU 320H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093433

MB Sample Id: 7680670-1-BLK

Matrix: Solid

LCS Sample Id: 7680670-1-BKS

Prep Method: TX1005P

Date Prep: 06.23.19

LCSD Sample Id: 7680670-1-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	1020	102	1080	108	70-135	6	20	mg/kg	06.23.19 13:04	
Diesel Range Organics (DRO)	<8.13	1000	1160	116	1170	117	70-135	1	20	mg/kg	06.23.19 13:04	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date	Flag		
1-Chlorooctane	100		82		91		70-135	%	06.23.19 13:04			
o-Terphenyl	119		102		105		70-135	%	06.23.19 13:04			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093435

MB Sample Id: 7680672-1-BLK

Matrix: Solid

LCS Sample Id: 7680672-1-BKS

Prep Method: TX1005P

Date Prep: 06.24.19

LCSD Sample Id: 7680672-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1010	101	1010	101	70-135	0	20	mg/kg	06.24.19 12:50	
Diesel Range Organics (DRO)	<8.13	1000	1070	107	1060	106	70-135	1	20	mg/kg	06.24.19 12:50	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1-Chlorooctane	102		86		88		70-135			%	06.24.19 12:50	
o-Terphenyl	102		106		107		70-135			%	06.24.19 12:50	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093433

Parent Sample Id: 628256-001

Matrix: Soil

MS Sample Id: 628256-001 S

Prep Method: TX1005P

Date Prep: 06.23.19

MSD Sample Id: 628256-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	11.6	999	871	86	854	84	70-135	2	20	mg/kg	06.23.19 14:19	
Diesel Range Organics (DRO)	11.8	999	966	96	993	98	70-135	3	20	mg/kg	06.23.19 14:19	
Surrogate			MS %Rec	MS Flag		MSD %Rec	MSD Flag	Limits		Units	Analysis Date	
1-Chlorooctane			78			84		70-135		%	06.23.19 14:19	
o-Terphenyl			95			91		70-135		%	06.23.19 14:19	

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



QC Summary 628029

LT Environmental, Inc.

PLU 320H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093435

Parent Sample Id: 628029-001

Matrix: Soil

MS Sample Id: 628029-001 S

Prep Method: TX1005P

Date Prep: 06.24.19

MSD Sample Id: 628029-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	9.76	997	994	99	904	89	70-135	9	20	mg/kg	06.24.19 14:05	
Diesel Range Organics (DRO)	8.70	997	1070	106	987	98	70-135	8	20	mg/kg	06.24.19 14:05	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	84		74		70-135	%	06.24.19 14:05
o-Terphenyl	94		87		70-135	%	06.24.19 14:05

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093413

MB Sample Id: 7680604-1-BLK

Matrix: Solid

LCS Sample Id: 7680604-1-BKS

Prep Method: SW5030B

Date Prep: 06.24.19

LCSD Sample Id: 7680604-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000772	0.101	0.0890	88	0.0969	97	70-130	8	35	mg/kg	06.24.19 18:13	
Toluene	<0.000458	0.101	0.0987	98	0.107	107	70-130	8	35	mg/kg	06.24.19 18:13	
Ethylbenzene	<0.00201	0.101	0.109	108	0.118	118	70-130	8	35	mg/kg	06.24.19 18:13	
m,p-Xylenes	<0.00102	0.201	0.219	109	0.236	117	70-130	7	35	mg/kg	06.24.19 18:13	
o-Xylene	0.000401	0.101	0.103	102	0.111	111	70-130	7	35	mg/kg	06.24.19 18:13	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		92		92		70-130	%	06.24.19 18:13
4-Bromofluorobenzene	109		106		102		70-130	%	06.24.19 18:13

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093413

Parent Sample Id: 628029-001

Matrix: Soil

MS Sample Id: 628029-001 S

Prep Method: SW5030B

Date Prep: 06.24.19

MSD Sample Id: 628029-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0882	88	0.0896	90	70-130	2	35	mg/kg	06.24.19 23:44	
Toluene	0.00123	0.0998	0.103	102	0.107	106	70-130	4	35	mg/kg	06.24.19 23:44	
Ethylbenzene	<0.00200	0.0998	0.114	114	0.119	119	70-130	4	35	mg/kg	06.24.19 23:44	
m,p-Xylenes	<0.00101	0.200	0.228	114	0.239	120	70-130	5	35	mg/kg	06.24.19 23:44	
o-Xylene	<0.00200	0.0998	0.109	109	0.114	114	70-130	4	35	mg/kg	06.24.19 23:44	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		91		70-130	%	06.24.19 23:44
4-Bromofluorobenzene	115		116		70-130	%	06.24.19 23:44

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

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Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296

Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

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Project Manager:	Ashley Ager	Bill to: (if different)	Kyle Littell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO-Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432.704.5178	Email:	aaeger@ltenv.com imcalfec@ltenv.com

Work Order Comments			
Program: UST/ST ☐ BP ☐ Brownfields ☐ RC ☐ Superfund ☐			
State of Project:			
Reporting Level II ☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV ☐			
Deliverables: EDD ☐ ADAPT ☐ Other:			

Project Name:		FLC 320H		Turn Around	
Project Number:				Routine ☐	
P.O. Number:				Rush:	
Sampler's Name:		Robert McAfee		Due Date:	

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	0.4604	Thermometer No.					
Received Intact:	Yes	No					
Cooler Custody Seals:	Yes	No	Correction Factor:		N/A		
Sample Custody Seals:	Yes	No	Total Containers:				

ANALYSIS REQUEST										Work Order Notes
of Containers A 8015) PA 0=8021) (EPA 300.0)										TAT starts the day received by the lab if received by 4:30pm

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EP)	BTEX (EP)	Chloride
BH01	S	06/19/19	1040	3'	1	X	X	X
BH01A			1045	4'		X	X	X
BH02			1040	3'		X	X	X
BH02A			1015	4'		X	X	X
BH03			1025	3'		X	X	X
BH03A			1028	4'		X	X	X
BH04	A	A	1100	6'	A	X	X	X

discrete

▲

Total 200.7 / 6010	200.8 / 6020:	
8RCRA 13PPM Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn	
Circle Method(s) and Metals(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 \$15.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>Robert M. [Signature]</i>	<i>[Signature]</i>	6/14/19 16:55	2	<i>[Signature]</i>	6/14/19 16:55
3			4		
5			6		



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/19/2019 11:40:00 AM

Work Order #: 628029

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/19/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/19/2019