

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	NAB1907955404
District RP	2 2RP-5309
Facility ID	
Application ID	pAB1907954910

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) NAB1907955404
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.277406° Longitude -103.945129°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Remuda 25 Observation Well #001	Site Type Observation Well
Date Release Discovered 2/28/2019	API# (if applicable) 30-015-45751

Unit Letter	Section	Township	Range	County
E	25	23S	29E	Eddy

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

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) 915	Volume Recovered (bbls) 199
☒ Produced Water	Volume Released (bbls) 2746	Volume Recovered (bbls) 596
	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 During drilling of the well, onsite personnel encountered a pressure kick. An accumulation of water, gas, and oil was encountered at a depth of 317'. Personnel secured the rig, switched off engines and ignition points, and safely mustered to the designated area. No injury occurred. The well flowed for approximately three hours before depleting the pressured zone. Additional third party resources have been retained to assist with remediation.

Form C-141

State of New Mexico
Oil Conservation Division

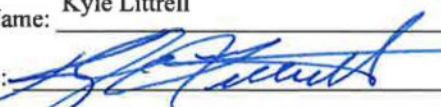
Page 2

Incident ID	NAB1907955404
District RP	2 2RP-5309
Facility ID	
Application ID	pAB1907954910

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 Amy Ruth to Mike Bratcher, Rob Hamlet, and Jim Griswold (NMOCD), Ryan Mann (SLO), and Jim Amos (BLM) on 3/1/2019 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>3-13-19</u> Telephone: <u>432-221-7331</u>
<u>OCD Only</u> Received by:  Date: <u>3/20/2019</u>	

Incident ID	
District RP	2RP-5309
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>50-100</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-5309
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: _____ 10/28/2019 _____

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

OCD Only

Received by: _____ Robert Hamlet _____ Date: _____ 11/13/2019 _____

Incident ID	
District RP	2RP-5309
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 CoordinatorSignature:  Date: 10/24/2019email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331**OCD Only**Received by: Robert Hamlet Date: 11/13/2019☐ Approved ☐ Approved with Attached Conditions of Approval ☒ Denied ☐ Deferral ApprovedSignature:  Date: 11/13/2019

Incident ID	NAB1907955404
District RP	2RP-5309
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 CoordinatorSignature:  Date: 01/28/2020email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331**OCD Only**Received by: Cristina Eads Date: 04/02/2020☐ Approved ☐ Approved with Attached Conditions of Approval ☒ Denied ☐ Deferral ApprovedSignature:  Date: 04/02/2020



LT Environmental, Inc.

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

January 28, 2020

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

**RE: Revised Deferral Request
Remuda 25 Observation Well #001
Remediation Permit Number 2RP-5309
Incident ID NAB1907955404
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following revision to an original Deferral Request Dated October 28, 2019, detailing site assessment, excavation, and soil sampling activities at the Remuda 25 Observation Well #001 (Site) in Unit E, Section 25, Township 23 South, Range 29 East, in Eddy County, New Mexico (Figure 1). The purpose of the remedial actions at the Site was to address impacts to soil following a February 28, 2019 release of crude oil and produced water. On November 13, 2019, the New Mexico Oil Conservation Division (NMOCD) rejected the original Deferral Request, requiring additional remediation of soil. This revised report presents a compilation of all excavation and delineation activities, including actions conducted at the Site following discussion with and recommendations from NMOCD. Based on the excavation activities and results from the soil confirmation sampling activities conducted to date, XTO again requests deferment of Remediation Permit (RP) Number 2RP-5309 until the Site is reconstructed, the observation well and associated site features are abandoned, and/or the affected pipeline is abandoned.

RELEASE BACKGROUND

On February 28, 2019, on-site drilling crews encountered a subsurface pressure kick during the installation of an observation well. Crews secured the drilling rig, switched off engines and ignition points, and safely evacuated the area. The well flowed for approximately three hours before depleting the pressurized zone. Approximately 915 bbls of crude oil and 2,746 bbls of produced water were released onto the caliche well pad, north-trending pipeline right-of-way (ROW), and adjoining pasture area. Vacuum trucks were dispatched to the Site to recover free-standing fluids; approximately 199 bbls of crude oil and 596 bbls of produced water were recovered. In addition, overspray was observed to the west of the well pad in the pasture. The western overspray area was treated with Micro-Blaze®. XTO reported the release to NMOCD on





Bratcher, M.
Page 2

a Release Notification and Corrective Action Form C-141 (Form C-141) on March 13, 2019 and was subsequently assigned RP Number 2RP-5309.

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of 19.15.29.12 of the NMAC. Depth to groundwater at the Site is estimated to be between 51 and 100 feet bgs based on the nearest water well data. The nearest permitted water well with reported depth to water data is United States Geological Survey (USGS) well 321717103561001, located approximately 4,678 feet northeast of the Site. The water well has a depth to groundwater of approximately 52 feet bgs. The total depth of the well could not be determined. Ground surface elevation at the water well location is 3,034 feet above mean seal level (AMSL), which is approximately 28 feet lower in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is an intermittent stream located approximately 620 feet to the northeast. 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 medium potential karst area.

CLOSURE CRITERIA

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

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

In addition, under NMAC 19.15.29.11A(5)(c), chloride soil impacts must be vertically delineated to 600 mg/kg or background when a produced water release of greater than 10,000 milligrams per liter (mg/L) occurs outside of lined containment area, depth to groundwater is greater than 50 feet but less than 100 feet bgs, and the release is of unknown quantity or greater than 200 bbls of unrecovered produced water.





SITE ASSESSMENT ACTIVITIES

On March 1 and September 17, 2019, LTE personnel inspected the Site to evaluate the estimated release extent. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS). LTE divided the release into the following three areas for assessment (depicted on Figure 2):

- The well pad;
- The north-trending lease road and pipeline ROW; and
- The western overspray area.

Surficial staining was observed on the well pad in the vicinity of the point of release and along the north-trending lease road and pipeline ROW. Initial preliminary soil sampling was focused on that area and the western overspray area. LTE personnel collected and field screened seven preliminary soil assessment samples at three points (SS01/SS01A, SS02/SS02A and SS03/SS03A/SS03B) along the north-trending release extent at depths of approximately 0.5 feet to 4 feet bgs. LTE personnel collected five preliminary soil samples (SS04 through SS08) within the western overspray area at a depth of approximately 0.5 feet bgs after the western overspray area was treated with Micro-Blaze®. Locations of soil samples are presented in Figure 3.

Soil samples were collected utilizing a hand auger, which was decontaminated prior to use and after each sample collection interval. Soil samples from both areas were field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively.

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

Based on visible staining in the release areas, field screening results, and laboratory analytical results, soil delineation and excavation appeared to be warranted for the well pad and the north-trending release flow path. The western overspray area did not exhibit soil exceedances above the NMOCD Closure Criteria; therefore, additional delineation and excavation activities were not warranted in that area. Photographic documentation was conducted during the site visit and is included in Attachment 1.



Bratcher, M.
Page 4

EXCAVATION ACTIVITIES AND ANALYTICAL RESULTS

From July 24 through September 17, 2019, LTE oversaw a multi-phased excavation to remediate impacted soil as indicated by visual observations, field screening results, and preliminary soil and delineation sample results. Additional excavation activities were conducted from November 15, 2019 through December 19, 2019 to address areas along the access road and on the well pad where exceedances of Closure Criteria were previously reported. Excavation activities were performed using track-mounted excavators, loaders, and transport vehicles.

Following removal of impacted soil to the maximum extent practicable, LTE collected 5-point composite soil samples every 1,000 square feet from the sidewalls and floor of the excavation in accordance with the variance granted by the NMOCD in an email dated August 13, 2019. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing to form one composite sample. A total of 99 composite floor soil samples (FS) and 51 composite sidewall samples (SW) were collected from the excavation at depths ranging from ground surface to a maximum depth of nine feet bgs. The excavation soil samples were collected, handled, and analyzed as described above at Xenco. The locations of final excavation confirmation samples are presented on Figures 4A through 4D.

The final excavation extent measured approximately 113,670 square feet in area. A total of approximately 17,300 cubic yards of impacted soil were removed during the excavation activities. The impacted soil was transported and properly disposed of at the Lea Land Landfill facility located in Hobbs, New Mexico.

Laboratory analytical results indicated benzene, BTEX, TPH-GRO and TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria with the exception of those locations directing adjacent to pipelines. Concentrations of TPH GRO/DRO and/or TPH were detected in five sidewall samples at concentrations greater than the Closure Criteria, including SW17, SW18, SW19, SW21, and SW26. TPH GRO/DRO concentrations ranged from 1,050 mg/kg in SW21 to 4,280 mg/kg in SW26. TPH concentrations ranged from 3,390 mg/kg at SW18 to 4,730 mg/kg at SW19. The five sidewall samples were located immediately adjacent to the existing pipelines within the northern excavation area and represent the top 5.5 feet of the subsurface next to those pipelines (Figure 4D). The tabulated analytical results are summarized in Table 1 and the laboratory data reports are provided in Attachment 4.

DELINEATION ACTIVITIES AND ANALYTICAL RESULTS

Impacted soil delineation was conducted in coordination with excavation activities to assist in defining the vertical and lateral extent of impacted soil exceeding Closure Criteria and left in place near the pipelines and the wellhead. In addition, soil chloride concentrations within the release





Bratcher, M.
Page 5

extent were vertically delineated to 600 mg/kg in accordance with NMAC 19.15.29.11A(5)(c). Multiple discrete soil samples from five boreholes (BH01 through BH05) and 22 separate potholes (PH01 through PH22) were collected for laboratory analysis. Delineation soil sample locations are presented on Figure 5. Borehole depths ranged from 6 feet bgs to 11 feet bgs. Pothole sample depths varied from approximately one foot to 17.5 feet bgs. Borehole sampling was completed with a hand auger. Pothole soil sampling was completed utilizing a backhoe. Soil samples were collected directly from the hand auger or backhoe bucket at discrete depth intervals. The discrete delineation soil samples were collected, handled and analyzed as described above.

The impacted soils remaining in place in the northern excavation area within two feet of active pipelines (sidewall samples SW17, SW18, SW19, SW21, and SW26) were delineated vertically and laterally by adjacent excavation confirmation samples and delineation sample locations BH01, BH02, BH04, BH07, PH08, PH15, and PH16 meeting Closure Criteria (Figures 4D and 5). An estimated 925 cubic yards of impacted soil along the pipeline remains in place for deferment.

It should be noted that delineation samples from potholes containing soil exceeding Closure Criteria in the shallow subsurface represent soil that was removed during excavation, except in PH17. Pothole PH17 was located in the northwestern corner of the caliche well pad and represents soil within ten feet of an active wellhead. The TPH-GRO/DRO concentration is 1,070 mg/kg and exceeds the Closure Criteria of 1,000 mg/kg. The soil in this area is delineated vertically and laterally by adjacent excavation confirmation sample SW50 and delineation samples PH17A and PH18/PH18A through PH22/PH22A, which meet Closure Criteria (Figures 4A and 5). An estimated 60 cubic yards of impacted soil in the northwest corner of the caliche well pad within 10 feet of the active wellhead remains in place for deferment.

In accordance with NMAC 19.15.29.11A(5)(c), soil was vertically delineated to 600 mg/kg chloride concentration with the borehole and pothole soil samples. A summary of the vertical delineation results includes:

- In the northern excavation area, chloride concentrations are vertically delineated to less than 600 mg/kg by potholes PH07 through PH12, PH14 through PH16, and boreholes BH01 through BH05 with depths ranging from approximately 1-foot to 14 feet bgs.
- In the north-central excavation area, chloride concentrations are vertically delineated to less than 600 mg/kg by pothole PH13 and borehole BH04 with depths ranging from approximately 4 feet to 6 feet bgs;
- In the south-central excavation area, chloride concentrations are vertically delineated to less than 600 mg/kg by potholes PH05 and PH06 with depths ranging from approximately 4 feet to 5 feet bgs; and





Bratcher, M.
Page 6

- In the southern excavation area, chloride concentrations less than 600 mg/kg are vertically delineated by potholes PH01, PH02, PH03, and PH04 with depths ranging from approximately 4 feet to 6 feet bgs.

DEFERRAL REQUEST

Approximately 17,300 cubic yards of impacted soil were excavated from the Site; however, residual TPH-impacted soil was left in place for compliance with XTO's safety policy regarding earth moving activities within two feet of active pipelines or within ten feet of an active wellhead. Composite floor and sidewall samples collected from the excavation indicate that impacted soil has been removed, excluding select areas along the pipeline ROW and in the northwest corner of the caliche well pad. The remaining soils contain elevated TPH and/or TPH-GRO+TPH-DRO and are in the northern excavation area within two feet of active pipelines (sidewall samples SW17, SW18, SW19, SW21, and SW26) and on the well pad within ten feet of the wellhead (PH17).

The impacted soil has been delineated vertically and laterally by adjacent excavation confirmation samples meeting Closure Criteria and delineation samples from BH01, BH02, BH04, BH07, PH08, PH15, and PH16. The remaining soil containing elevated GRO+DRO in the northwest corner of the caliche well pad has been delineated vertically and laterally by adjacent excavation confirmation soil sample SW50 and delineation soil samples PH17A and PH18/PH18A through PH22/PH22A meeting Closure Criteria. An estimated total of 985 cubic yards of impacted soil along the pipeline and near the wellhead remains in place for deferment. A hydro-vacuum was utilized within the excavations to remove as much soil as safely possible from the vicinity of the pipeline. Further excavation in the area of delineation pothole PH17 was not feasible due to the proximity of an active wellhead. Analytical results of the discrete samples collected from the bottom of delineation pothole and borehole samples vertically delineate chloride concentrations to 600 mg/kg across the release footprint as required by NMAC 19.15.29.11A(5)(c).

XTO requests permission to complete remediation in the pipeline ROW and on the caliche well pad during any future major construction/alteration or final abandonment of the pipeline ROW and caliche well pad, whichever occurs first. LTE and XTO do not believe deferment will result in an imminent risk to human health, the environment, or groundwater. No saturated soil remains in place and mass source removal has occurred. Remaining impact is delineated vertically and laterally. Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. In addition, natural attenuation of the remaining soil impacts to below Closure Criteria is probable. XTO is respectfully requesting deferment of RP Number 2RP-5309 until the Site is reconstructed, the observation well and associated site features are abandoned, and/or the pipeline is abandoned.

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





Bratcher, M.
Page 7

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in blue ink that reads "Kevin M. Axe".

Kevin M. Axe, P.G.
Senior Geologist

A handwritten signature in black ink that reads "Ashley L. Ager".

Ashley L. Ager, P.G.
Senior Geologist

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

Attachments:

Figure 1	Site Location Map
Figure 2	Site Assessment Areas
Figure 3	Preliminary Soil Sample Locations
Figure 4A	Excavation Soil Sample Locations
Figure 4B	Excavation Soil Sample Locations
Figure 4C	Excavation Soil Sample Locations
Figure 4D	Excavation Soil Sample Locations
Figure 5	Delineation Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Photographic Log
Attachment 2	Lithologic/Soil Sample Logs
Attachment 3	Variance Request
Attachment 4	Laboratory Analytical Reports



FIGURES



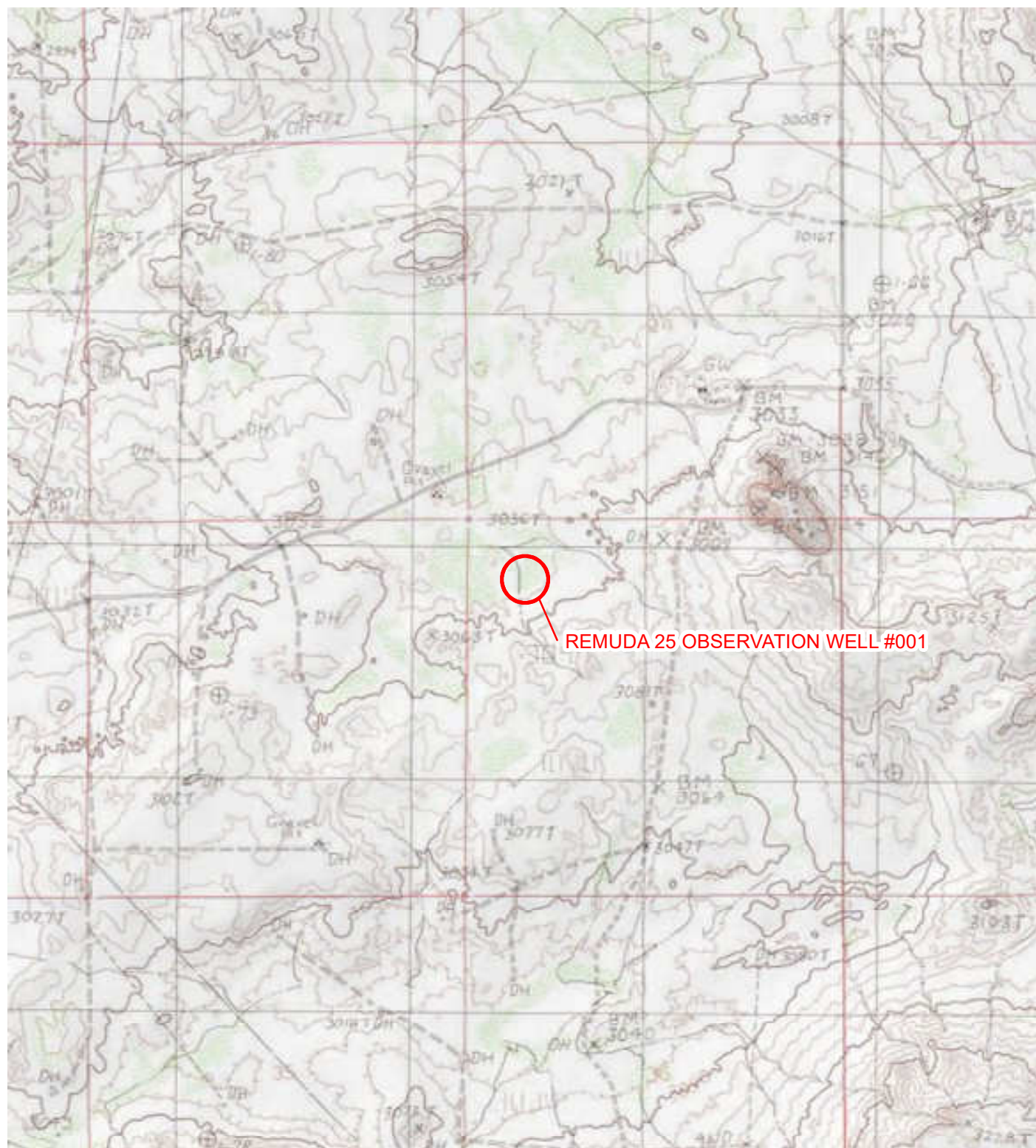
**LEGEND**

IMAGE COURTESY OF ESRI/USGS

 SITE LOCATION

0 2,000 4,000
Feet



NOTE: REMEDIATION PERMIT
NUMBER 2RP-5309

FIGURE 1
SITE LOCATION MAP
REMUDA 25 OBSERVATION WELL #001
UNIT D SEC 25 T23S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



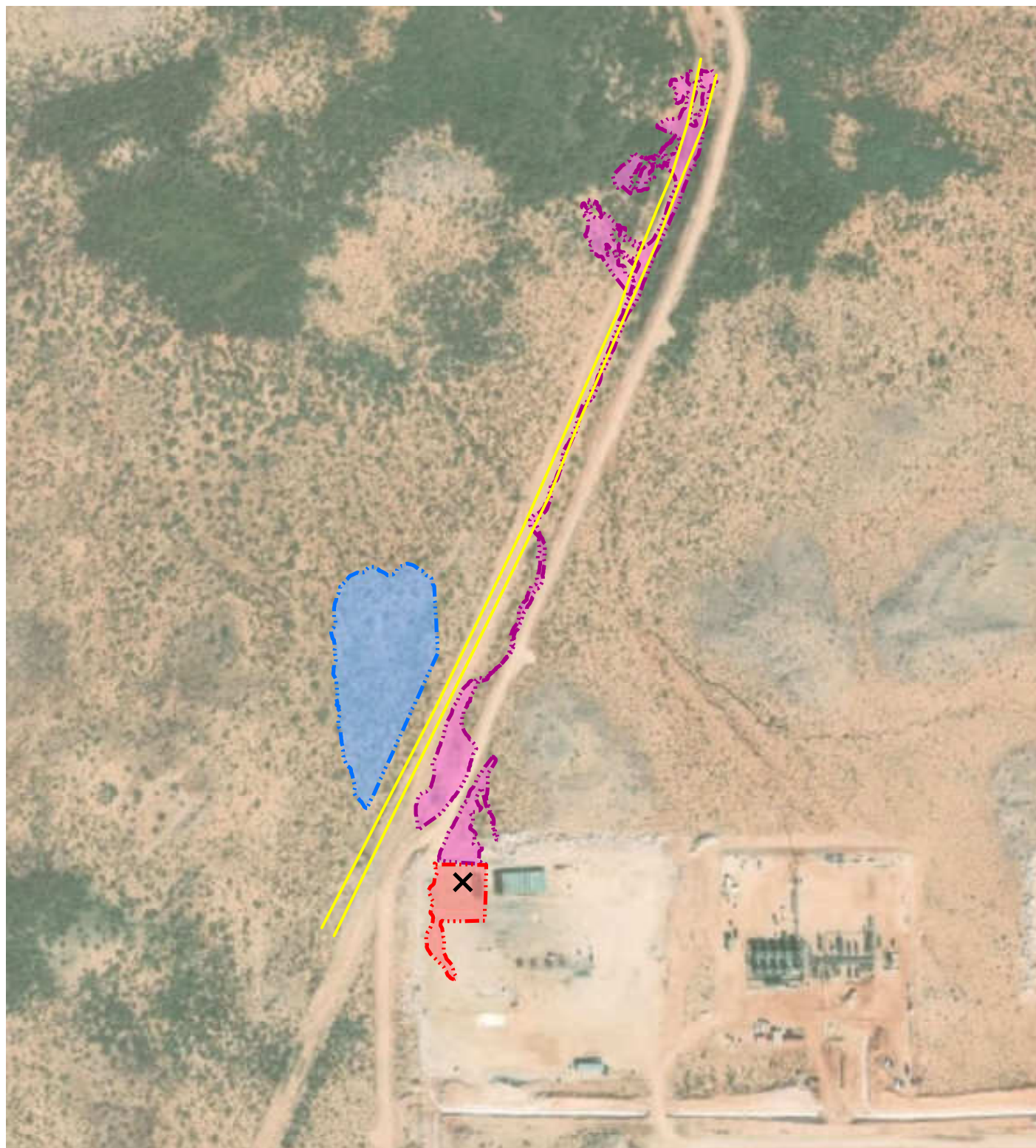
**LEGEND**

IMAGE COURTESY OF ESRI



RELEASE LOCATION - WELLHEAD



GAS LINE



RELEASE AREA 1: WELL PAD

RELEASE AREA 2: LEASE ROAD AND
PIPELINE RIGHT-OF-WAY

RELEASE AREA 3: WESTERN OVERSPRAY AREA

NOTE: REMEDIATION PERMIT NUMBER 2RP-5309

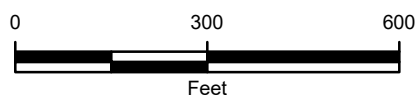
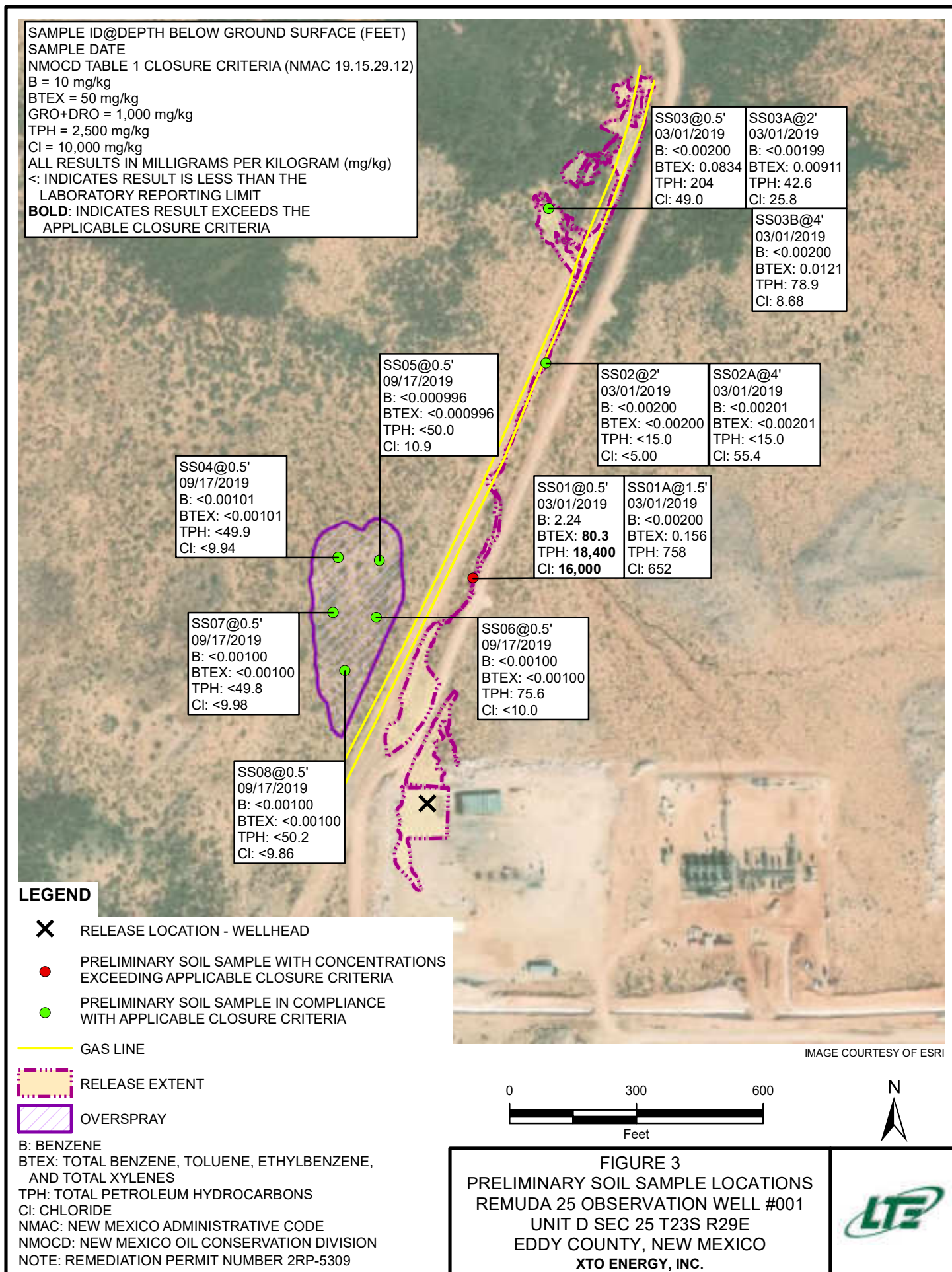
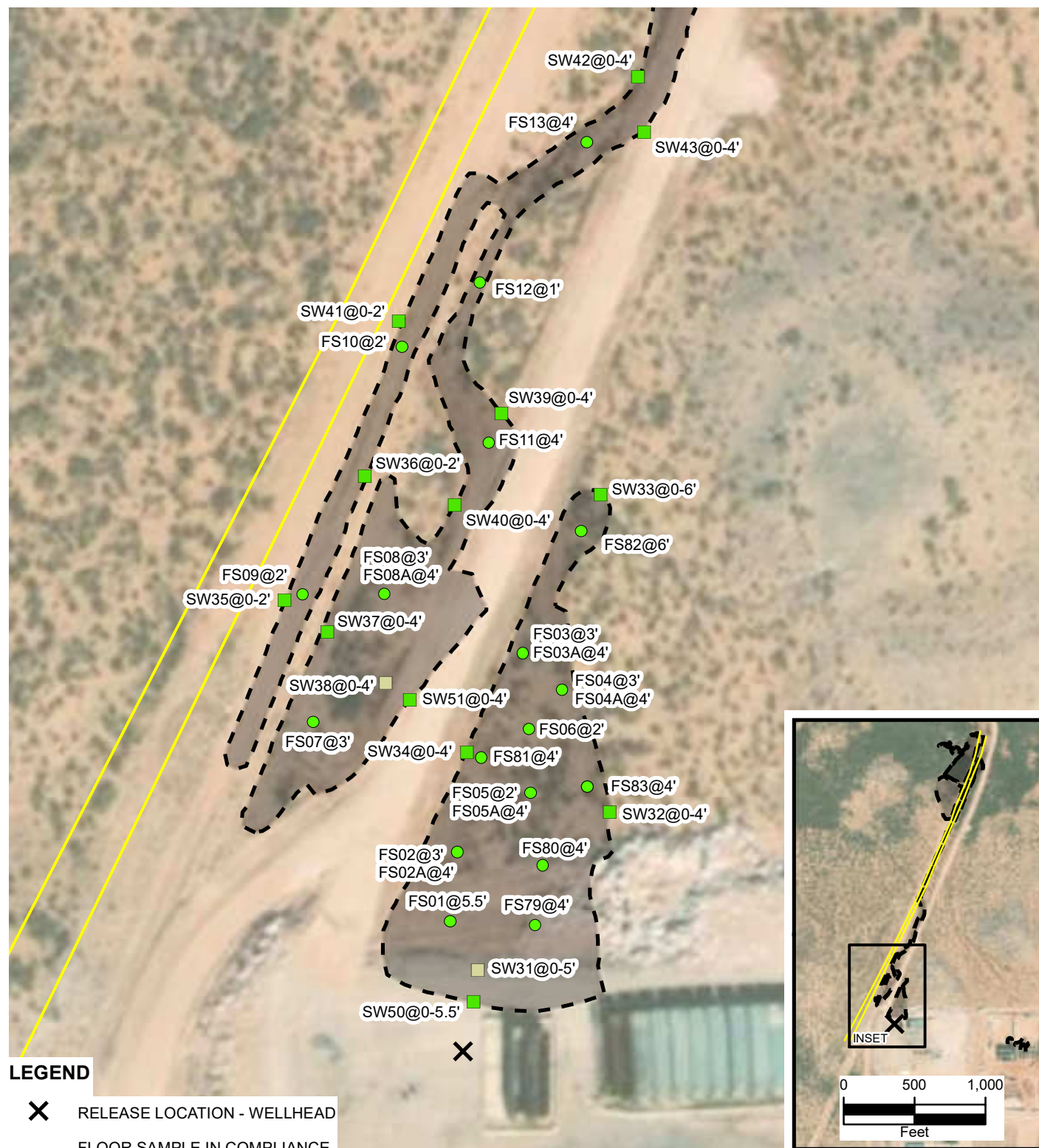


FIGURE 2
SITE ASSESSMENT AREAS
REMUDA 25 OBSERVATION WELL #001
UNIT D SEC 25 T23S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.





**LEGEND**

RELEASE LOCATION - WELLHEAD

FLOOR SAMPLE IN COMPLIANCE
WITH APPLICABLE CLOSURE CRITERIASIDEWALL SAMPLE IN COMPLIANCE
WITH APPLICABLE CLOSURE CRITERIASIDEWALL SAMPLE PREVIOUSLY EXCEEDING APPLICABLE
CLOSURE CRITERIA AND HAS BEEN EXCAVATED

— GAS LINE



EXCAVATION EXTENT

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)

TD: TOTAL DEPTH OF SAMPLE (FEET)

NOTE: REMEDIATION PERMIT NUMBER 2RP-5309

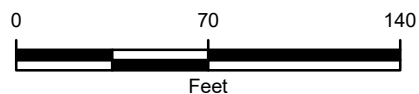
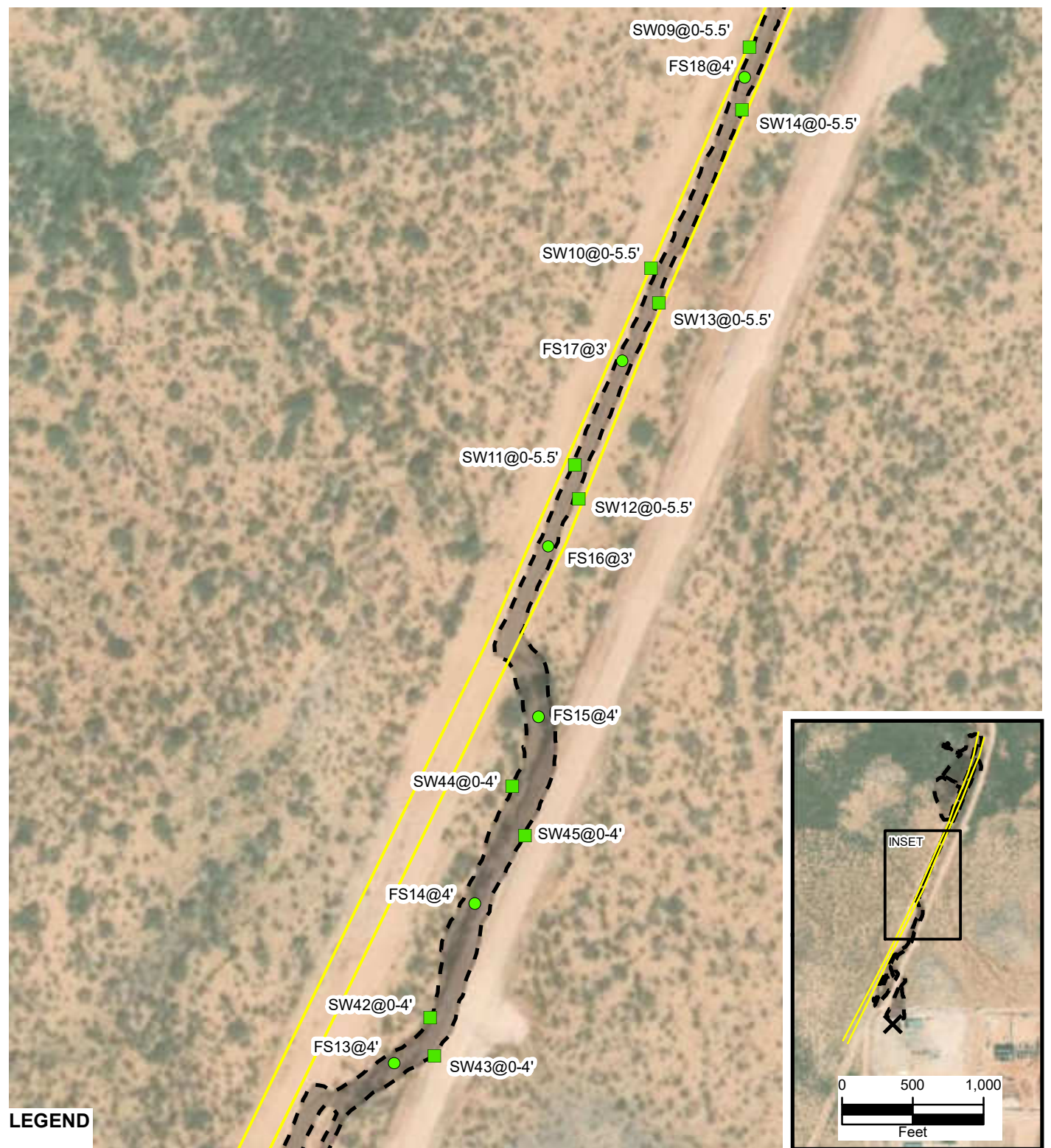


FIGURE 4A
SOIL SAMPLE LOCATIONS
 REMUDA 25 OBSERVATION WELL #001
 UNIT D SEC 25 T23S R29E
 EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



**LEGEND**

- X** RELEASE LOCATION - WELLHEAD
- FLOOR SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- SIDEWALL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

— GAS LINE

EXCAVATION EXTENT

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)

TD: TOTAL DEPTH OF SAMPLE (FEET)

NOTE: REMEDIATION PERMIT NUMBER 2RP-5309

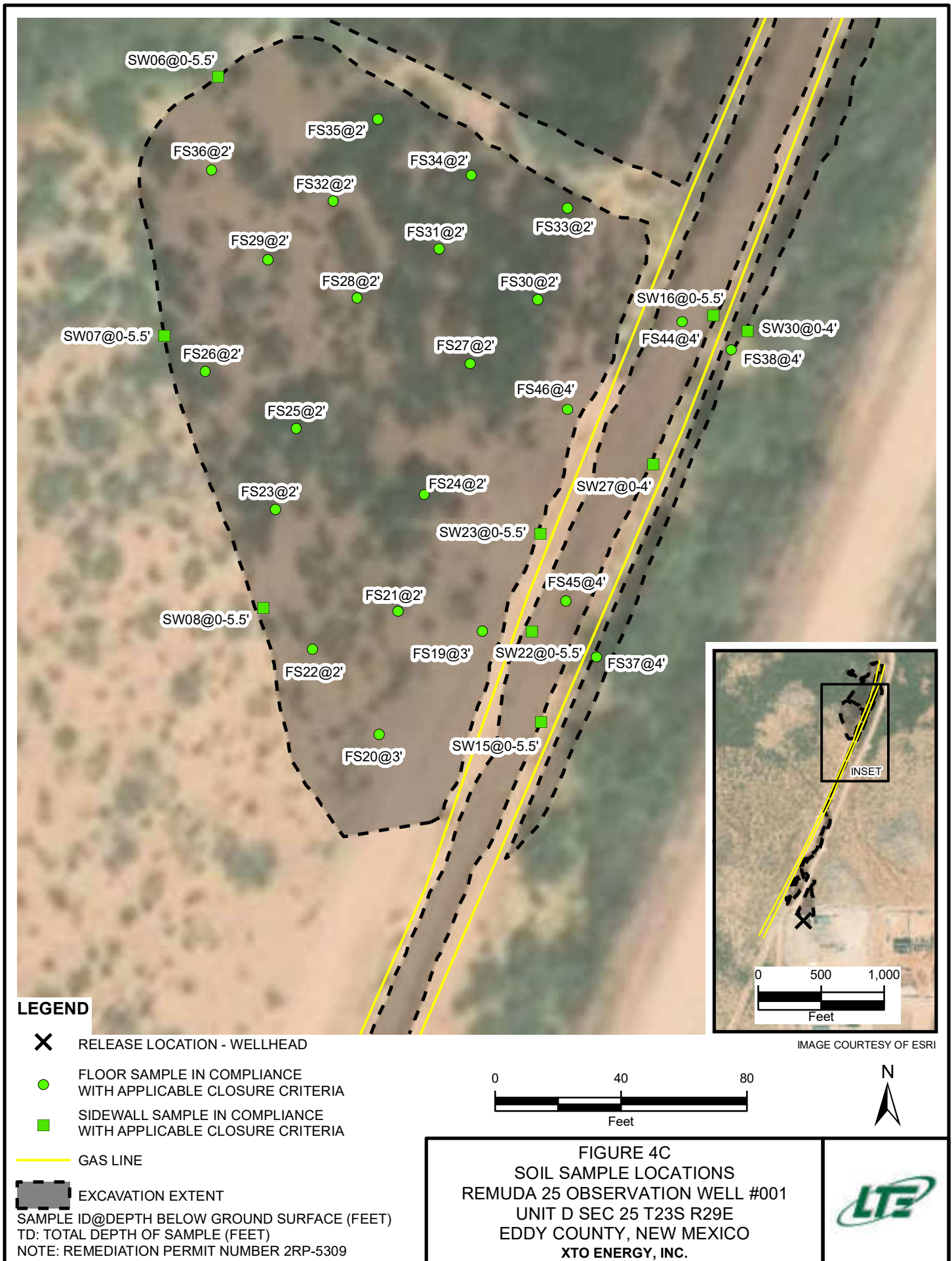
0 100 200
Feet

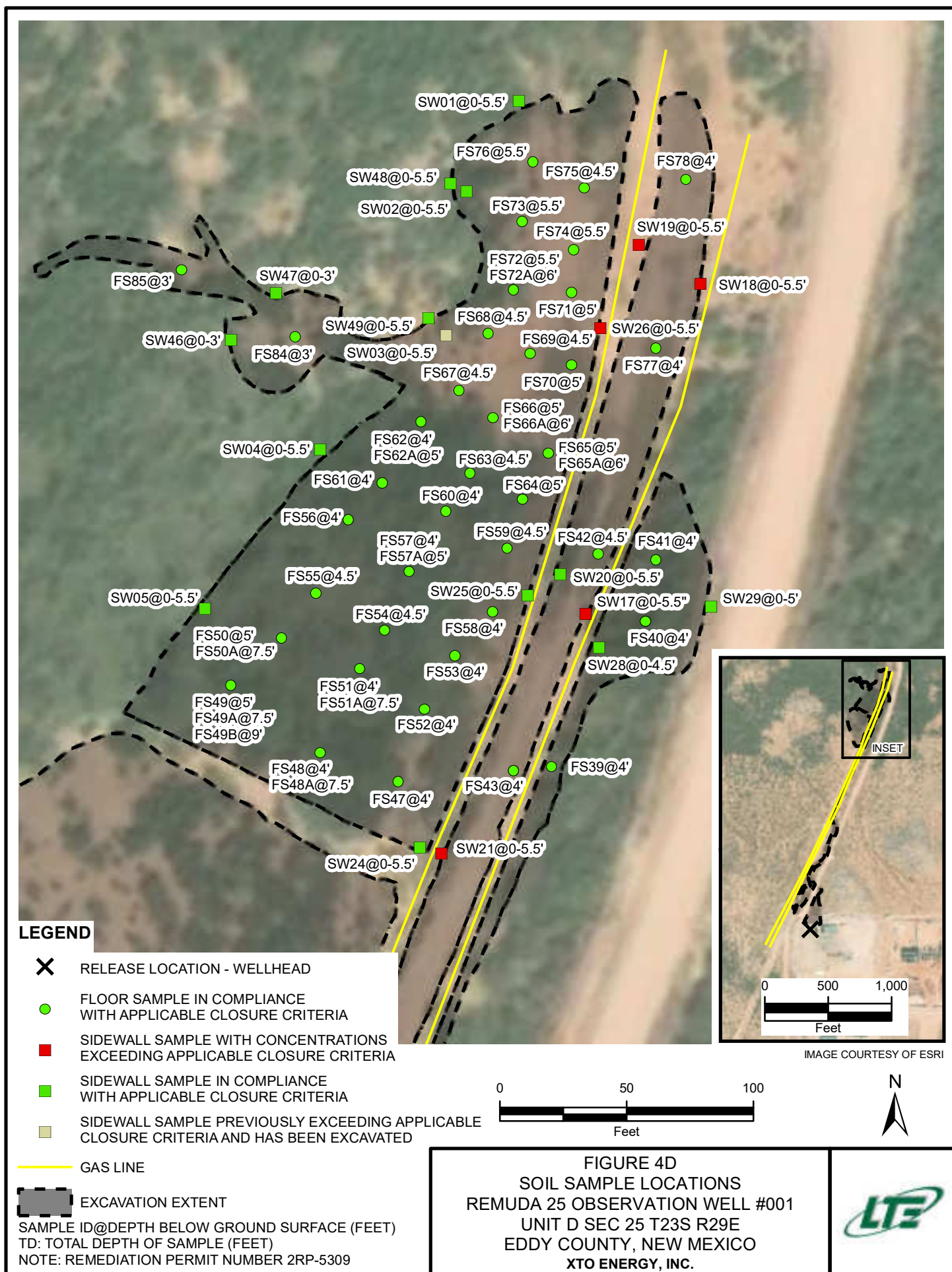


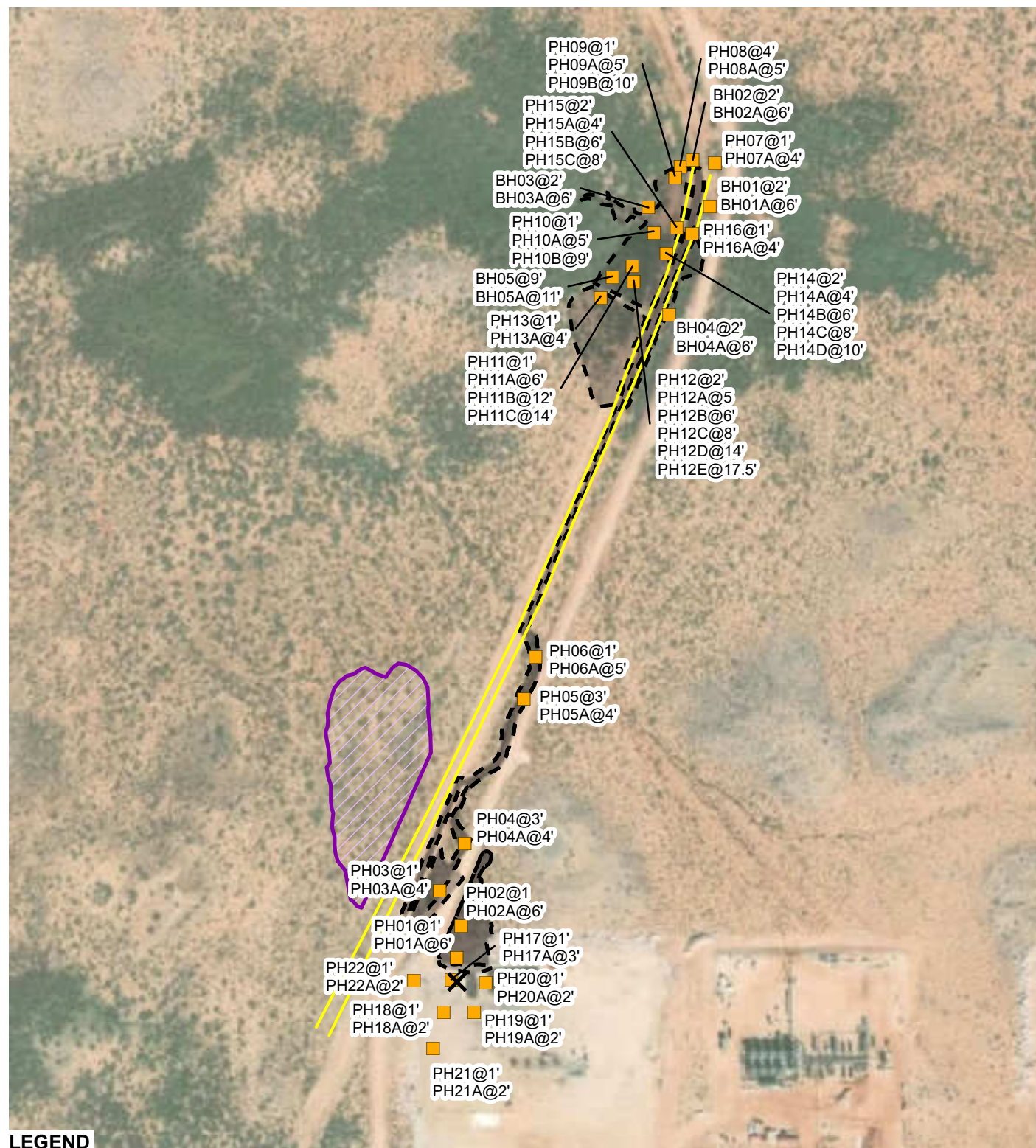
IMAGE COURTESY OF ESRI

FIGURE 4B
SOIL SAMPLE LOCATIONS
 REMUDA 25 OBSERVATION WELL #001
 UNIT D SEC 25 T23S R29E
 EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.







**LEGEND**

✕ RELEASE LOCATION - WELLHEAD

■ DELINEATION SOIL SAMPLE

— GAS LINE

▨ OVERSPRAY

▬ EXCAVATION EXTENT

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
NOTE: REMEDIATION PERMIT NUMBER 2RP-5309

IMAGE COURTESY OF ESRI

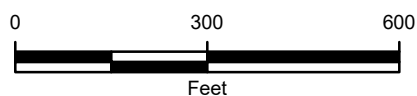


FIGURE 5
DELINEATION SOIL SAMPLE LOCATIONS
REMUDA 25 OBSERVATION WELL #001
UNIT D SEC 25 T23S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



TABLES



**TABLE 1
SOIL ANALYTICAL RESULTS**

**REMUDA 25 OBSERVATION WELL #001
REMEDATION PERMIT NUMBER 2RP-5309
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000
SS01	0.5	03/01/2019	2.24	23.3	4.59	50.2	80.3	7,200	10,000	1,170	17,200	18,400	16,000
SS01A	1.5	03/01/2019	<0.00201	0.00568	0.0427	0.140	0.156	158	544	56.3	702	758	652
SS02	2	03/01/2019	<0.00200	0.00361	0.00505	0.0747	0.0834	25.1	161	17.6	186	204	49.0
SS02A	4	03/01/2019	<0.00200	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	55.4
SS03	0.5	03/01/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
SS03A	2	03/01/2019	<0.00199	<0.00199	<0.00199	0.00911	0.00911	<15.0	42.6	<15.0	42.6	42.6	25.8
SS03B	4	03/01/2019	<0.00200	<0.00200	<0.00200	0.0121	0.0121	<14.9	78.9	<14.9	78.9	78.9	8.68
SS04	0.5	09/17/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<49.9	<49.9	<49.9	<49.9	<49.9	<9.94
SS05	0.5	09/17/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<50.0	<50.0	<50.0	<50.0	<50.0	10.9
SS06	0.5	09/17/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.0	75.6	<50.0	75.6	75.6	<10.0
SS07	0.5	09/17/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<49.8	<49.8	<49.8	<49.8	<49.8	<9.98
SS08	0.5	09/17/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	<9.86
PH01	1	07/23/2019	<0.00200	0.0892	0.0811	1.20	1.37	254	1,280	76.9	1,530	1,610	2,870
PH01A	6	07/23/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	<14.9	189
PH02	1	07/23/2019	0.0121	0.106	0.108	2.78	3.01	840	4,840	250	5,680	5,930	112
PH02A	6	07/23/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	33.0	36.0	33.0	69.0	167
PH03	1	07/23/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	164	16.2	164	180	19.4
PH03A	4	07/23/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	23.9
PH04	3	07/23/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	283
PH04A	4	07/23/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	322
PH05	3	07/23/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	38.7	<15.0	38.7	38.7	2,150
PH05A	4	07/23/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	359
PH06	1	07/23/2019	<0.00202	<0.00202	<0.00202	0.0646	0.0646	<15.0	354	23.5	354	378	33.2
PH06A	5	07/23/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	14.4



TABLE 1
SOIL ANALYTICAL RESULTS

REMUDA 25 OBSERVATION WELL #001
REMEDIATION PERMIT NUMBER 2RP-5309
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000
PH07	1	07/31/2019	<0.00200	<0.00200	<0.00200	0.0111	0.0111	<15.0	<15.0	<15.0	<15.0	<15.0	5.21
PH07A	4	07/31/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	9.42
PH08	4	07/31/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	51.3	<15.0	51.3	51.3	10.7
PH08A	5	07/31/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	9.58
PH09	1	07/31/2019	0.213	3.68	0.42	23.6	27.9	1,350	2,630	122	3,980	4,100	1,770
PH09A	5	07/31/2019	0.00444	0.0545	0.0158	0.184	0.259	22.3	87.5	<15.0	110	110	5,400
PH09B	10	07/31/2019	<0.00200	0.0021	0.0144	0.0194	0.0359	<15.0	37.0	<15.0	37.0	37.0	364
PH10	1	07/31/2019	0.863	11.1	3.03	48.3	63.3	2,140	3,410	135	5,550	5,690	4,350
PH10A	5	07/31/2019	0.00531	0.0313	0.0104	0.0501	0.0971	<14.9	37.8	<14.9	37.8	37.8	343
PH10B	9	07/31/2019	0.00467	0.0829	0.0193	0.283	0.390	37.3	235	18.1	272	290	78.3
PH11	1	07/31/2019	<0.200	2.07	1.02	10.6	13.7	515	1,030	44.7	1,550	1,590	72.5
PH11A	6	07/31/2019	0.00333	0.0124	0.00244	0.0261	0.0442	<15.0	33.6	<15.0	33.6	33.6	1,100
PH11B	12	07/31/2019	0.00382	0.0226	0.0176	0.126	0.170	26.1	133	<15.0	159	159	1,020
PH11C	14	07/31/2019	<0.00199	0.00449	0.0111	0.0270	0.0426	<14.9	29.8	<14.9	29.8	29.8	588
PH12	2	08/02/2019	0.653	9.27	1.97	37.4	49.3	2300	3460	104	5,860	5,760	14.0
PH12A	5	08/02/2019	<0.00994	0.858	0.265	3.55	4.67	161	348	22.8	1,530	1,610	2,870
PH12B	6	08/02/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	11.5
PH12C	8	08/02/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	15.4
PH12D	14	08/02/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	29.9	<15.0	29.9	29.9	19.1
PH12E	17.5	08/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	19.3	90.1	<14.9	109	109	609
PH13	1	08/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	354	378	33.2
PH13A	4	08/02/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<14.9	<14.9	189
PH14	2	08/02/2019	0.272	6.46	1.59	29.2	37.5	1,360	2,400	81.2	33.0	69.0	167



TABLE 1
SOIL ANALYTICAL RESULTS

REMUDA 25 OBSERVATION WELL #001
REMEDIATION PERMIT NUMBER 2RP-5309
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000
PH14A	4	08/02/2019	0.793	3.33	1.10	17.9	23.2	1,170	2,180	82.7	<15.0	<15.0	23.9
PH14B	6	08/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	322
PH14C	8	08/02/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	18.1	74.5	<15.0	<15.0	<15.0	359
PH14D	10	08/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	106
PH15	2	08/02/2019	0.532	5.73	1.75	28.7	36.7	1,430	2,670	85.2	4,100	4,190	2,560
PH15A	4	08/02/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	2,350
PH15B	6	08/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	243
PH15C	8	08/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	14.8
PH16	1	08/02/2019	<0.00200	1.57	0.111	16.0	17.7	1,170	2,890	98.7	4,060	4,160	3,440
PH16A	4	08/02/2019	<0.00200	<0.00200	<0.00200	0.0151	0.0151	<15.0	<15.0	<15.0	<15.0	<15.0	481
PH17	1	09/13/2019	<0.00198	<0.00198	<0.00198	0.0457	0.0457	<49.9	1,070	117	1,070	1,190	1,840
PH17A	3	09/13/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	142	<49.8	142	142	863
PH18	1	09/13/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	61.6	<50.0	61.6	61.6	500
PH18A	2	09/13/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	69.5
PH19	1	09/13/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	93.0
PH19A	2	09/13/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	47.6
PH20	1	09/13/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	282	<49.8	282	282	258
PH20A	2	09/13/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	175
PH21	1	09/13/2019	<0.00200	<0.00200	<0.00200	0.00563	0.00563	<50.0	<50.0	<50.0	<50.0	<50.0	330
PH21A	2	09/13/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	95.2	<49.9	95.2	95.2	298
PH22	1	09/13/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	103
PH22A	2	09/13/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	43.5
BH01	2	9/25/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<49.8	<49.8	<49.8	<49.8	<49.8	<9.88



**TABLE 1
SOIL ANALYTICAL RESULTS**

**REMUDA 25 OBSERVATION WELL #001
REMEDATION PERMIT NUMBER 2RP-5309
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000
BH01A	6	9/25/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.0	<50.0	<50.0	<50.0	<50.0	<9.88
BH02	2	9/25/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.0	<50.0	<50.0	<50.0	<50.0	12.9
BH02A	6	9/25/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	22.6
BH03	2	9/25/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	116
BH03A	6	9/25/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.3	<50.3	<50.3	<50.3	<50.3	61.1
BH04	2	9/25/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	36.0
BH04A	6	9/25/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	<9.96
BH05	9	9/26/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.0	<50.0	<50.0	<50.0	<50.0	3,290
BH05A	11	9/26/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.0	<50.0	<50.0	<50.0	<50.0	3,350
FS01	5.5	07/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	88.7	15.3	88.7	104	812
FS02	3	07/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	50.6	<15.0	50.6	50.6	2,260
FS02A	4	09/12/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<25.0	<25.0	<25.0	<25.0	<25.0	756
FS03	3	07/30/2019	<0.00199	<0.00199	<0.00199	0.0165	0.0165	<15.0	<15.0	<15.0	<15.0	<15.0	3,840
FS03A	4	09/12/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<24.9	<24.9	<24.9	<24.9	<24.9	3,340
FS04	3	07/30/2019	<0.00198	<0.00198	0.0516	0.0402	0.0918	<15.0	62.7	<15.0	62.7	62.7	2,480
FS04A	4	09/12/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<24.9	<24.9	<24.9	<24.9	<24.9	197
FS05	2	07/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,220
FS05A	4	09/12/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<25.1	<25.1	<25.1	<25.1	<25.1	494
FS06	2	07/30/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	260
FS07	3	08/06/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	48.3	<15.0	48.3	48.3	323
FS08	3	08/06/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	47.9	<15.0	47.9	47.9	1,060
FS08A	4	09/17/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<50.0	<50.0	<50.0	<50.0	<50.0	1,120
FS09	2	08/06/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	25.5	<15.0	25.5	25.5	46.4



**TABLE 1
SOIL ANALYTICAL RESULTS**

**REMUDA 25 OBSERVATION WELL #001
REMEDIATION PERMIT NUMBER 2RP-5309
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000
FS10	2.5	08/07/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	502
FS11	4	08/07/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	941
FS12	1	08/08/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	29.4	485	30.5	545	514	214
FS13	4	08/08/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	181
FS14	4	08/08/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	247
FS15	4	08/08/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	23.1	<14.9	23.1	23.1	1,070
FS16	3	08/27/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<24.9	<24.9	<24.9	<24.9	<24.9	13.4
FS17	3	08/27/2019	<0.000988	<0.000988	<0.000988	<0.000988	<0.000988	<24.9	<24.9	<24.9	<24.9	<24.9	30.0
FS18	4	08/27/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<25.0	<25.0	<25.0	<25.0	<25.0	12.7
FS19	1.5	08/27/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<24.9	<24.9	<24.9	<24.9	<24.9	<9.92
FS20	3	08/27/2019	<0.000990	<0.000990	<0.000990	<0.000990	<0.000990	<24.8	<24.8	<24.8	<24.8	<24.8	<9.84
FS21	2	08/27/2019	<0.000990	<0.000990	<0.000990	<0.000990	<0.000990	<24.8	<24.8	<24.8	<24.8	<24.8	<9.96
FS22	2	08/27/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<25.0	<25.0	<25.0	<25.0	<25.0	<9.90
FS23	2	08/27/2019	<0.000992	<0.000992	<0.000992	<0.000992	<0.000992	<24.8	<24.8	<24.8	<24.8	<24.8	18.5
FS24	2	08/28/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<24.8	<24.8	<24.8	<24.8	<24.8	13.4
FS25	2	08/28/2019	<0.000980	<0.000980	<0.000980	<0.000980	<0.000980	<24.8	<24.8	<24.8	<24.8	<24.8	29.1
FS26	2	08/28/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<24.9	<24.9	<24.9	<24.9	<24.9	32.2
FS27	2	08/28/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<24.9	<24.9	<24.9	<24.9	<24.9	45.6
FS28	2	08/28/2019	<0.000986	<0.000986	<0.000986	<0.000986	<0.000986	<24.9	<24.9	<24.9	<24.9	<24.9	34.4
FS29	2	08/28/2019	<0.000990	<0.000990	<0.000990	<0.000990	<0.000990	<25.0	<25.0	<25.0	<25.0	<25.0	34.3
FS30	2	08/28/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<25.1	<25.1	<25.1	<25.1	<25.1	32.9
FS31	2	08/28/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<25.0	<25.0	<25.0	<25.0	<25.0	<9.88
FS32	2	08/28/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<25.0	<25.0	<25.0	<25.0	<25.0	14.6



**TABLE 1
SOIL ANALYTICAL RESULTS**

**REMUDA 25 OBSERVATION WELL #001
REMEDATION PERMIT NUMBER 2RP-5309
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000
FS33	2	08/28/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<25.0	<25.0	<25.0	<25.0	<25.0	17.5
FS34	2	08/28/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<25.0	<25.0	<25.0	<25.0	<25.0	24.1
FS35	2	08/28/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<25.0	<25.0	<25.0	<25.0	<25.0	22.6
FS36	2	08/28/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<25.0	<25.0	<25.0	<25.0	<25.0	54.5
FS37	4	08/29/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<25.1	<25.1	<25.1	<25.1	<25.1	<9.84
FS38	4	08/29/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<24.9	<24.9	<24.9	<24.9	<24.9	<9.98
FS39	4	08/29/2019	<0.000994	<0.000994	0.00116	<0.000994	0.00116	<25.1	<25.1	<25.1	<25.1	<25.1	<9.82
FS40	4	08/29/2019	<0.00101	<0.00101	0.00107	0.00570	0.00677	<25.0	133	<25.0	133	133	<9.94
FS41	4	08/29/2019	<0.000992	<0.000992	<0.000992	<0.000992	<0.000992	<24.9	<24.9	<24.9	<24.9	<24.9	<9.92
FS42	4.5	08/29/2019	<0.00100	<0.00100	0.00133	0.00784	0.00917	<25.1	319	<25.1	319	319	69.9
FS43	4	08/29/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<25.0	<25.0	<25.0	<25.0	<25.0	<9.88
FS44	4	08/29/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<25.1	<25.1	<25.1	<25.1	<25.1	<9.98
FS45	4	08/29/2019	<0.000992	<0.000992	<0.000992	<0.000992	<0.000992	<24.9	<24.9	<24.9	<24.9	<24.9	13.2
FS46	4	08/29/2019	<0.00101	<0.00101	<0.00101	0.00584	0.00584	<25.1	<25.1	<25.1	<25.1	<25.1	13.7
FS47	4	08/29/2019	<0.00101	<0.00101	0.00115	<0.00101	0.00115	<25.1	<25.1	<25.1	<25.1	<25.1	17.6
FS48	4	08/29/2019	<0.100	<0.100	0.176	2.00	2.17	157	997	<25.1	1,150	1,150	24.4
FS48A	7.5	09/12/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<24.9	<24.9	<24.9	<24.9	<24.9	5,890
FS49	5	08/29/2019	<0.0992	0.382	0.670	6.52	7.57	244	1,310	<25.0	1,550	1,550	1,970
FS49A	7.5	09/11/2019	<0.000982	0.0157	0.0334	0.408	0.457	275	1,270	<25.0	1,550	1,550	9,600
FS49B	9	11/15/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.0	<50.0	<50.0	<50.0	<50.0	3,130
FS50	5	08/29/2019	<0.100	<0.100	0.191	2.12	2.32	115	1,080	<24.9	1,200	1,200	541
FS50A	7.5	09/11/2019	<0.00201	0.044	0.126	1.55	1.72	165	662	<25.0	827	827	3,020
FS51	4	08/29/2019	<0.101	0.354	0.673	7.69	8.72	345	1,510	<25.1	1,860	1,860	11.6
FS51A	7.5	09/11/2019	<0.000996	<0.000996	<0.000996	0.00389	0.00389	<24.9	<24.9	<24.9	<24.9	<24.9	741



**TABLE 1
SOIL ANALYTICAL RESULTS**

**REMUDA 25 OBSERVATION WELL #001
REMEDIATION PERMIT NUMBER 2RP-5309
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000
FS52	4	08/29/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<25.0	<25.0	<25.0	<25.0	<25.0	38.9
FS53	4	08/30/2019	<0.00100	<0.00100	<0.00100	0.00102	0.00102	<25.0	<25.0	<25.0	<25.0	<25.0	414
FS54	4.5	08/30/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<25.1	<25.1	<25.1	<25.1	<25.1	362
FS55	4.5	08/30/2019	<0.100	<0.100	0.103	1.13	1.23	99.2	763	<24.9	862	862	1,450
FS56	4	08/30/2019	<0.101	0.121	0.295	3.00	3.42	137	800	<24.9	937	937	536
FS57	4	08/30/2019	<0.0998	0.519	1.06	10.2	11.7	779	2,650	<25.1	3,430	3,430	792
FS57A	5	09/11/2019	<0.00101	<0.00101	<0.00101	0.00743	0.00743	<25.1	<25.1	<25.1	<25.1	<25.1	1,070
FS58	4	08/30/2019	<0.00101	<0.00101	<0.00101	0.00160	0.00160	<25.1	<25.1	<25.1	<25.1	<25.1	529
FS59	4.5	08/30/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<24.9	<24.9	<24.9	<24.9	<24.9	501
FS60	4	08/30/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<25.1	<25.1	<25.1	<25.1	<25.1	574
FS61	4	08/30/2019	<0.00100	0.00107	0.00816	0.0828	0.0920	<25.1	270	<25.1	270	270	825
FS62	4	08/30/2019	<0.0996	0.544	1.07	8.50	10.1	127	1,100	<25.1	1,230	1,230	218
FS62A	5	09/11/2019	<0.000996	0.00171	0.00214	0.0257	0.0296	<25.0	79.9	<25.0	79.9	79.9	1,560
FS63	4.5	08/30/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<25.1	<25.1	<25.1	<25.1	<25.1	322
FS64	5	08/30/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<25.0	<25.0	<25.0	<25.0	<25.0	1,140
FS65	5	08/30/2019	<0.100	3.95	3.14	28.8	35.9	157	1,070	<25.1	1,230	1,230	3,200
FS65A	6	09/11/2019	<0.000992	<0.000992	<0.000992	<0.000992	<0.000992	<24.9	<24.9	<24.9	<24.9	<24.9	1,860
FS66	5	08/30/2019	<0.100	0.974	1.25	11.1	13.3	141	1,150	<25.1	1,290	1,290	514
FS66A	6	09/11/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<25.1	<25.1	<25.1	<25.1	<25.1	670
FS67	4.5	08/30/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<25.1	<25.1	<25.1	<25.1	<25.1	337
FS68	4.5	09/04/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<25.1	<25.1	<25.1	<25.1	<25.1	28.8
FS69	4.5	09/04/2019	<0.101	0.121	<0.101	0.644	0.765	<25.1	286	<25.1	286	286	49.8
FS70	5	09/04/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<25.1	<25.1	<25.1	<25.1	<25.1	595
FS71	5	09/04/2019	<0.00994	<0.00994	0.0111	0.0567	0.0678	<24.9	133	<24.9	133	133	179



TABLE 1
SOIL ANALYTICAL RESULTS

REMUDA 25 OBSERVATION WELL #001
REMEDIATION PERMIT NUMBER 2RP-5309
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000
FS72	5.5	09/04/2019	<0.101	0.741	1.30	10.4	12.5	292	1,070	<25.1	1,362	1,360	51.7
FS72A	6	09/12/2019	<0.000986	<0.000986	<0.000986	<0.000986	<0.000986	<25.0	<25.0	<25.0	<25.0	<25.0	2,170
FS73	5.5	09/04/2019	<0.00994	<0.00994	<0.00994	<0.00994	<0.00994	<25.1	<25.1	<25.1	<25.1	<25.1	2,770
FS74	5.5	09/04/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<25.0	<25.0	<25.0	<25.0	<25.0	316
FS75	4.5	09/04/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<24.9	<24.9	<24.9	<24.9	<24.9	1,290
FS76	5.5	09/04/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<25.1	<25.1	<25.1	<25.1	<25.1	1,860
FS77	4	09/11/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<25.1	<25.1	<25.1	<25.1	<25.1	54.4
FS78	4	09/11/2019	<0.00101	<0.00101	<0.00101	0.0114	0.0114	<25.1	<25.1	<25.1	<25.1	<25.1	37.0
FS79	4	09/12/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<25.0	<25.0	<25.0	<25.0	<25.0	272
FS80	4	09/12/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<24.9	<24.9	<24.9	<24.9	<24.9	480
FS81	4	09/12/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<25.0	<25.0	<25.0	<25.0	<25.0	276
FS82	6	09/17/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.3	117	<50.3	117	117	25.5
FS83	4	09/12/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<25.0	<25.0	<25.0	<25.0	<25.0	288
FS84	3	09/17/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.3	<50.3	<50.3	<50.3	<50.3	20.7
FS85	3	09/17/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.1	59.6	<50.1	59.6	59.6	42.4
SW01	0 - 5.5	09/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<25.0	<25.0	<25.0	<25.0	<25.0	430
SW02	0 - 5.5	09/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<24.9	<24.9	<24.9	<24.9	<24.9	672
SW03	0 - 5.5	09/05/2019	<0.00199	<0.00199	<0.00199	0.00633	0.00633	126	2,330	331	2,460	2,790	22.9
SW04	0 - 5.5	09/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<25.0	<25.0	<25.0	<25.0	<25.0	32.5
SW05	0 - 5.5	09/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<24.9	79.7	<24.9	79.7	79.7	270
SW06	0 - 5.5	09/05/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<25.0	39.1	<25.0	39.1	39.1	33.9
SW07	0 - 5.5	09/05/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<24.9	<24.9	<24.9	<24.9	<24.9	9.38
SW08	0 - 5.5	09/05/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<24.9	<24.9	<24.9	<24.9	<24.9	7.60
SW09	0 - 5.5	09/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<25.0	<25.0	<25.0	<25.0	<25.0	10.3



TABLE 1
SOIL ANALYTICAL RESULTS

REMUDA 25 OBSERVATION WELL #001
REMEDIATION PERMIT NUMBER 2RP-5309
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000
SW10	0 - 5.5	09/05/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<25.0	<25.0	<25.0	<25.0	<25.0	24.4
SW11	0 - 5.5	09/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<24.9	<24.9	<24.9	<24.9	<24.9	20.9
SW12	0 - 5.5	09/05/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<25.0	<25.0	<25.0	<25.0	<25.0	390
SW13	0 - 5.5	09/05/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<25.0	<25.0	<25.0	<25.0	<25.0	50.9
SW14	0 - 5.5	09/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<24.9	<24.9	<24.9	<24.9	<24.9	274
SW15	0 - 5.5	09/06/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<25.0	862	144	862	1,010	27.3
SW16	0 - 5.5	09/06/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<25.0	237	33.8	237	271	216
SW17	0 - 5.5	09/06/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	27.6	1,220	219	1,250	1,470	294
SW18	0 - 5.5	09/06/2019	<0.00198	<0.00198	0.0289	0.158	0.186	493	2,620	279	3,110	3,390	1,030
SW19	0 - 5.5	09/06/2019	<0.00201	<0.00201	0.0381	0.163	0.201	565	3,700	464	4,270	4,730	129
SW20	0 - 5.5	09/06/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<25.0	357	43.0	357	400	886
SW21	0 - 5.5	09/06/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<24.9	1,050	161	1,050	1,210	14.0
SW22	0 - 5.5	09/06/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<25.0	<25.0	<25.0	<25.0	<25.0	22.2
SW23	0 - 5.5	09/06/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<24.9	<24.9	<24.9	<24.9	<24.9	15.3
SW24	0 - 5.5	09/06/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<25.0	<25.0	<25.0	<25.0	<25.0	16.1
SW25	0 - 5.5	09/06/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<25.0	488	64.7	488	553	2,020
SW26	0 - 5.5	09/06/2019	0.0326	3.41	0.276	25.3	29.0	1,220	3,060	241	4,280	4,520	2,000
SW27	0 - 4	09/11/2019	<0.000984	<0.000984	<0.000984	<0.000984	<0.000984	<24.9	<24.9	<24.9	<24.9	<24.9	308
SW28	0 - 4.5	09/11/2019	<0.000990	<0.000990	<0.000990	<0.000990	<0.000990	<24.9	124	<24.9	124	124	545
SW29	0 - 5	09/11/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<25.1	<25.1	<25.1	<25.1	<25.1	<10.0
SW30	0 - 4	09/11/2019	<0.000986	<0.000986	<0.000986	0.00834	0.00834	<25.1	<25.1	<25.1	<25.1	<25.1	<9.84
SW31	0 - 5	09/12/2019	<0.0100	0.046	0.448	5.25	5.74	195	1,850	<24.9	2,050	2,050	1,790
SW32	0 - 4	09/12/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<25.0	<25.0	<25.0	<25.0	<25.0	145
SW33	0 - 6	09/12/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<24.9	<24.9	<24.9	<24.9	<24.9	95.7



**TABLE 1
SOIL ANALYTICAL RESULTS**

**REMUDA 25 OBSERVATION WELL #001
REMEDATION PERMIT NUMBER 2RP-5309
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000
SW34	0 - 4	09/12/2019	<0.000992	<0.000992	<0.000992	<0.000992	<0.000992	<24.9	<24.9	<24.9	<24.9	<24.9	2,130
SW35	0 - 2	09/17/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.3	<50.3	<50.3	<50.3	<50.3	46.2
SW36	0 - 2	09/17/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1	556
SW37	0 - 4	09/17/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.3	<50.3	<50.3	<50.3	<50.3	656
SW38	0 - 4	09/17/2019	<0.000992	0.00316	0.0175	0.198	0.218	95.9	1,160	<50.0	1,260	1,260	556
SW39	0 - 4	09/17/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	1,030
SW40	0 - 4	09/17/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1	551
SW41	0 - 2	09/17/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1	19.8
SW42	0 - 4	09/17/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<49.8	<49.8	<49.8	<49.8	<49.8	264
SW43	0 - 4	09/17/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<49.8	<49.8	<49.8	<49.8	<49.8	84.1
SW44	0 - 4	09/17/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.1	<50.1	<50.1	<50.1	<50.1	30.6
SW45	0 - 4	09/17/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<50.2	<50.2	<50.2	<50.2	<50.2	208
SW46	0 - 3	09/17/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	16.1
SW47	0 - 3	09/17/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.1	147	<50.1	147	147	17.6
SW48	0 - 5.5	11/18/2019	<0.000992	<0.000992	<0.000992	<0.000992	<0.000992	<49.8	<49.8	<49.8	<49.8	<49.8	<9.98
SW49	0 - 5.5	11/18/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	<9.94
SW50	0 - 5.5	12/18/2019	<0.00202	0.00226	0.00668	0.0256	0.0345	<50.2	52.6	<50.2	52.6	52.6	1,170
SW51	0 - 4	12/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	70.8

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

ORO - motor oil range organics

NMAC - New Mexico Administrative Code

NMOCD - New Mexico Oil Conservation Division

NE - not established

Bold - indicates result exceeds the applicable regulatory standard

< - indicates result is below laboratory reporting limits

Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018

TPH - total petroleum hydrocarbons



ATTACHMENT 1: PHOTOGRAPHIC LOG



Northern view of release area during delineation activities.

Project: 012919039	XTO Energy, Inc. Remuda 25 Observation Well #001	 Advancing Opportunity
July 24, 2019	Photographic Log	



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

Project: 012919039	XTO Energy, Inc. Remuda 25 Observation Well #001	 Advancing Opportunity
September 12, 2019	Photographic Log	



View of the overspray area.

Project: 012919039	XTO Energy, Inc. Remuda 25 Observation Well #001	 <i>Advancing Opportunity</i>
September 17, 2019	Photographic Log	



View of the final northern excavation area and deferred areas along the pipelines.

Project: 012919039	XTO Energy, Inc. Remuda 25 Observation Well #001	 <i>Advancing Opportunity</i>
September 17, 2019	Photographic Log	

ATTACHMENT 2: LITHOLOGIC SOIL SAMPLE LOGS



 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH01 Date: 07/25/14						
LITHOLOGIC / SOIL SAMPLING LOG		Project Name: Remed 25 obs well #1 RP Number:						
Lat/Long:	Field Screening:	Logged By: Robert M. Hole Diameter: 2 ft Method: Pothole Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
dry	2270	1717	Y		1	1'	S	SP-SC Brown Red
dry	480	278	N		2	2'	S	↓
dry	624	152.4	N		3	3'	S	SC non plastic Red Brown PG
dry	6124	54.1	N		4	4'	S	SC
dry	6124	97.6	N		5	5'	S	SC
dry	6124	50.8	N		6	6'	S	SC
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH02	Date: 07/23/19
		Project Name: Remedia 25 obs well #1	RP Number:
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: Robert M.	Method: Pot Luck
Lat/Long:		Field Screening:	Hole Diameter: 2"
Total Depth:			
Comments:			

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
130	M	1100	3071	N	1	1'	S	SC Red Brown
	D	1124	1026	N	2	2'	S	SC
	D	3941	62.1	N	3	3'	S	SC
	D	2941	33.2	N	4	4'	S	SC
					5			
	D	200	10.8	N	6	6'	S	SC
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation					Identifier: PH03		Date: 07/23/19		
					Project Name: Remundo 25 obs well #1		RP Number:		
LITHOLOGIC / SOIL SAMPLING LOG									
Lat/Long:			Field Screening:			Logged By: Robert M.		Method: Potholes	
						Hole Diameter: 2'		Total Depth:	
Comments:									
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks	
					0				
M	<114	67.4	N		1	1'	S	SP-SC Brown 	
D	<124	46.3	N		2	2'	S		
D	680	15.0	N		3	3'	S		
D	<124	13.7	N		4	4'	S		
					5				
					6				
					7				
					8				
					9				
					10				
					11				
					12				

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH04	Date: 07/23/19
		Project Name: Remuda 25 obs well #1	RP Number:
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: Robert M.	Method: Pothole
Lat/Long:	Field Screening:	Hole Diameter: 2'	Total Depth:
Comments:			

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
M	6124	8.2	N		1	1'	S	SC Brown
M	912	5.3	N		2	2'	S	SP-SC Brown Red
D	280	16.1	N		3	3'	S	SP-SC
D	280	1.4	N		4	4'	S	SP-SC
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH05	Date: 07/27/19					
		Project Name: Ranudo CS obs well #1	RP Number:					
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening:	Logged By: Robert M					
		Hole Diameter: 4"	Method: Pot Hole					
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
M	104	26.1	N		1	1'	S	CL low Plasticity Red Brown
M	102	1.5	N		2	2'	S	CL low Plasticity Red Brown
D	104	55.7	N		3	3'	S	CL non plastic Red Brown
D	920	2.2	N		4	4'	S	SC non plastic Red Brown
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH06	Date: ~~8/18~~					
		Project Name: Remuda 25 obs well #1	RP Number:					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: Robert M.	Method: Pothole					
Lat/Long:	Field Screening:	Hole Diameter: 2'	Total Depth:					
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
M	212.8	253.5	N		1	1'	S	SC Red Brown 
M	212.8	67.8	N		2	2'	S	
D	680	4.3	N		3	3'	S	
D	2144	2.0	N		4	4'	S	
D	212.8	2.4	N		5	5'	S	
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH07	Date: 07/31/19					
		Project Name: Remuda 25 obs Well #1	RP Number:					
LITHOLOGIC / SOIL SAMPLING LOG								
Lab Log:		Field Screening:	Logged By: Robert M. Hole Diameter: 2 1/2"					
			Method: Pothole Total Depth:					
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
0930 M	<100	0.5	N	-	1	1'	S	SP-SM dark Brown trace root
0935 M	<100	0.2	N		2	2'	S	SP-SM dark Brown
0940 M	<100	0.2	N		3	3'	S	SP-SM dark Brown
0945 D	<128	0.1	N	-	4	4'	S	SP-SC Brown slight red
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance • Engineering • Remediation		Identifier: PH08 Date: 07/31/19						
Project Name: Remed - 25 Obs well #1		RP Number:						
Logged By: Robert M		Method: Politic						
Hole Diameter: 2'		Total Depth:						
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
0950	M	493	3.2	N		1'	S	SP-SM dark brown trace root
0955	D	<124	6.0	N		2'	S	SP-SM Brown
1006	D	<124	1.6	N		3'	S	SP-SM Brown
1005	D	<124	229	N	1	4'	S	SP-SC Brown slight red
1010	D	<124	8.4	N	1	5'	S	SP-SC Brown slight red
					6			
					7			
					8			
					9			
					10			
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH09		Date: 07/31/19			
				Project Name:		RP Number:			
LITHOLOGIC / SOIL SAMPLING LOG				Logged By:		Method:			
Lat/Long:		Field Screening:		Hole Diameter:		Total Depth:			
Comments:									
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks	
					0				
1055	M	211	1596	Y	—	1	1'	S	SP-SM dark Brown trace red
1100	M	6747	796	Y		2	2'	S	SP-SM dark Brown
1105	M	3850	385	N		3	3'	S	SP-SC Brown slight red
1110	M	3850	217	N		4	4'	S	SP-SC Brown slight red
1120	M	5973	388	N	—	5	5'	S	SP-SC Brown reddish
1150	M	3850	78.6	N		6	6.5'	S	CHCE/SC white/red Brown
						7			
1200	D	3192	104	N		8	8'	S	SC Red Brown non plastic
						9			
1305	D	468	51.2	N	—	10	10'	S	SC Red Brown non plastic
						11			
						12			

		LT Environmental, Inc. 506 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH10		Date: 07/31/19			
				Project Name: Remedia 29 obs well #1		RP Number:			
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: Robert M		Method: pot hole			
Lat/Long:		Field Screening:		Hole Diameter: 2'		Total Depth:			
Comments:									
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks	
					0				
1345	M	2508	1368	Y	—	1	1'	S	SP-SM trace root dark Brown
1350	M	3650	1355	Y		2	2'	S	SP-SM ~~dark~~ dark Brown
1355	M	1658	636.6	N		3	3'	S	SP-SM dark brown/Brown
1400	M	1075	160	N		4	4'	S	SP-SM Brown
1405	M		224	N	—	5	5'	S	SP-SM Brown trace clay
1410	M	200	99	N		6	6'	S	SP-SM Brown red
					7				
					8				
1420	M	1128	69.8 ~~56~~	N	—	9	9'	S	SP-SM Brown red
					10				
					11				
					12				

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH11 Date: 07/31/19						
Project Name: Samuda 25 Obs well #1		RP Number:						
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: Robert M. Method: Probe						
Lab/Field:	Field Screening:	Hole Diameter: 2' Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1530	M	200	1477	Y	—	1	1'	S SP-SM dark brown
1535	M	200	1340	Y		2	2'	S SP-SM dark brown
1545	M	200	936	N		3	3'	S SP-SC Brown mod Plastic
1550	M	110	548	N		4	4'	S SP-SC Brown non Plastic
						5		
1555	M	1410	2659	N	—	6	6'	S SP-SC Brown
						7		
1600	M	2895	237	N		8	8.5'	S SP-SC Brown
						9		
1605	M	2411	30.1	N		10	10'	S SP-SC Brown
						11		
1610	M	900	720	N	—	12	12'	S SC/CL Brown Red / green grey
1615	M	2124	48	N	—	14'	S	CL Red / grey

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH12 Date: 08/02/19						
Project Name: Remedia. 25 Gas Well #1		RP Number:						
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: Robert M. Method: Pof hole						
Lat/Long:	Field Screening:	Hole Diameter: 2" Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
0920 M	6124	4354	Y		1	1'	S	SP-SM Dark Brown
0930 M	6124	3870	Y	1	2	2'	S	SP-SM Brown
0935 M	6124	3876	N		3	3'	S	SP-SC Brown Reddish
0940 M	6124	1880	N		4	4'	S	SP-SC Brown Reddish
0945 M	6124	1499	N	1	5	5'	S	SC Brown Reddish
1000 M	6124	541	N	1	6	6'	S	SC Brown
					7			
1005 M	6124	357	N	1	8	8'	S	SC Brown
					9			
1030 M	6124		N		10	10'	S	CL Red Brown non plastic hard
					11			
0635 M	6124		N	1	12	12'	S	CL Red Brown/Grey non plastic hard
D	6124		N	1	14'		S	

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance - Engineering - Remediation		Identifier: PHB	Date: 03/02/19					
		Project Name: Remuda 25 65 well #1	RP Number:					
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening:	Logged By: Robert M Hole Diameter: 2'					
			Method: Pot hole Total Depth:					
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1130 M	124	150	N		1	1'	S	SP-SM Brown
1150 M	124	150	N		2	2'	S	SP-SM Brown
1155 M	124	150	N		3	3'	S	SP-SC Brown
1200 M	124	150	N		4	4'	S	SP-SC Brown
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance • Engineering • Remediation		Identifier: PH 14		Date: 08/02/19		
				Project Name: Remediation 25 Obs Well #1		RP Number:		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: Robert M		Method: Pothole		
Lat/Long:		Field Screening:		Hole Diameter: 2'		Total Depth:		
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
					1	1'	S	SP-SM dark brown
					2	2'	S	SP-SM Brown
					3	3'	S	SP-SC Brown
					4	4'	S	SP-SC Brown
					5	5'	S	SP-SC Brown
					6	6'	S	SP-SC Brown
					7			
					8	8'	S	SP-SC Brown
					9			
					10	10'	S	SP-SC Brown Reddish
					11			
					12			

1300
13551305
14001310
14051315
14101320
14151325
14201330
14251340
1430

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH15		Date: 08/02/19		
				Project Name:		RP Number:		
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening:		Logged By:		Method:		
				Hole Diameter:		Total Depth:		
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1355	M	7248	1082	Y		1'	S	SC Brown
1400	M	3248	1098	Y	-	2'	S	SC
1405	M	6763	267	N		3'	S	SC
1410	M	3248	308	N	-	4'	S	SC
					5			
1415	M	6763	329	N	-	6'	S	SC Brown Red
					7			
1420	M	6763	429	N	-	8'	S	SC Brown Red
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH16	Date: 08/02/19					
		Project Name: Remuda 25 obs well #1	RP Number:					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: Robert M	Method: Pot hole					
Lat/Long:	Field Screening:	Hole Diameter: 2'	Total Depth:					
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
Dry	3248	25.9	N		1	1'	S	SC Brown
Dry	4252	15.8	N		2	2'	S	
Dry	680	20.4	N		3	3'	S	
Dry	380	9.8	N		4	4'	S	
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance • Engineering • Remediation		Identifier: PH17 Date: 09/13/19						
Project Name: Remuda 25 obs Well #1		RP Number:						
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening:						
Logged By: Robert M.		Method: Pothole						
Hole Diameter: 2'		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1020	D	1,917	336	Y		1'	S	Sandy Caliche light Brown
1030	D	874	513	N		2'	S	Sandy Caliche light Brown
1040	D	1,128	111	N		3'	S	SP-SC light Brown
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance • Engineering • Remediation		Identifier: PH18		Date: 09/13/19		
				Project Name: Remuda 25 Obs well #1		RP Number:		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: Robert M.		Method: Pothole		
Lat/Long:		Field Screening:		Hole Diameter: 2'		Total Depth:		
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1055 dry	450	98.8	N		0			
					1	1'	S	SP-SC Brown
1120 dry	117	52	N		2	2'	S	SC Reddish Brown
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH19		Date: 09/13/19		
				Project Name: Ranuda 25 cbr Well #1		RP Number:		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: Robert M.		Method: Pothole		
Lat/Long:		Field Screening:		Hole Diameter: 2'		Total Depth:		
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1120 dry	2100	0.1	N		1	1'	S	SP-SM Brown
1125 dry	2128	0.1	N		2	2'	S	SP-SM Brown
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH20		Date: 09/13/19		
				Project Name: Remuda 25 Obs Well #1		RP Number:		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: Robert A.		Method: Pothole		
Lat/Long:		Field Screening:		Hole Diameter: 2'		Total Depth:		
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
dry	320	120	N		1	1'	S	SP-SM Brown
dry	<125	9.2	N		2	2'	S	SP-SM Brown
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH 21 Date: 09/13/19						
LITHOLOGIC / SOIL SAMPLING LOG		Project Name: Resuda 25 obs well #1 RP Number:						
Lab/Log:	Field Screening:	Logged By: Robert M. Method: Yothak						
Comments:		Hole Diameter: 2" Total Depth:						
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
12.4%	dry	380	260	BY	1	1'	S	SP-SC white/tan
12.50	dry	520	29.6	N	2	2'	S	SP-SC white/tan
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance - Engineering - Remediation		Identifier: PH22 Date: 09/13/19						
Project Name: Remedia 15 PWS well #1		RP Number:						
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: Robert M. Method: Pitlog						
Lat/Long:	Field Screening:	Hole Diameter: 2" Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<100	0.1	N		0			
dry	<100	0.1	N		1	1'	S	SP-SM light Brown tan
dry	<100	0.1	N		2	2'	S	SP-SM light Brown tan
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance - Engineering - Remediation

Identifier: BHO1

Date: 09/25/19

Project Name:
Remunda 25 Obs
well #1

RP Number:
2RP-5309

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By: Robert M.

Method: Hand Auger

Hole Diameter:
3"

Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
D	<124	0.3	N		1	1'	S	SP-SM Brown
D	<124	0.3	N		2	2'	S	SP-SM Brown
D	<124	0.4	N		3	3'	S	SP-SC Brown red
D	<124	0.2	N		4	4'	S	SP-SC Brown red
					5			
D	<124	0.2	N		6	6'	S	SC Brown red
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH02 Date: 09/15/11						
Project Name: Remuda 25 Cbs Well #1		RP Number: 2RP-5309						
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:	Field Screening:	Logged By: Robert M. Hole Diameter: 3"						
Method: Hand Auger Total Depth:								
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<124	0.7	N		0			
D	380	0.8	N		1	1'	S	SP-SM Brown
M	200	0.5	N		2	2'	S	SP-SM
M	380	0.5	N		3	3'	S	SP-SC
M	380	0.5	N		4	4'	S	SC Brown Red
M	<124	0.4	N		5			
					6	6'	S	SC
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH03 Date: 09/25/18 ~~9/25~~						
Project Name: Remuda 25 Obs well #1		RP Number: 2RP 5309						
Logged By: Robert M		Method: Hand Auger						
Hole Diameter: 3"		Total Depth:						
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
D	<124	1.1	N		1	1'	S	SP-SM Brown
D	380	2.9	N		2	2'	S	SP-SC Brown Red
M	<124	1.0	N		3	3'	S	SC
M	200	0.8	N		4	4'	S	SC
					5			
M	<124	0.6	N		6	6'	S	SC
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier: BH04

Date: 09/25/19

Project Name:
Remuda 25 obs
Well #1

RP Number:
2RP-5309

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By: Robert M.

Method: Hand Auger

Hole Diameter: 3"

Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
D	<124	2.1	N		1	1'	S	SP-SM Brown
M	<124	1.9	N		2	2'	S	SP-SM ↓
M	200	0.8	N		3	3'	S	SP-SC light Brown red
M	480	1.0	N		4	4'	S	SP-SC light Brown red
					5			
M	<124	0.8	N		6	6'	S	SP-SC Brown/red
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance - Engineering - Remediation

Identifier: BH05

Date: 09/26/19

Project Name:
Remunda 25 obs Well
PI

RP Number:
2RP 5309

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By:

Method:

Hole Diameter:

Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1015 M	6560	21.9	N		0	9'	S	SC Brown/Red
1020 M	7632	13.8			3	11'	S	SC Brown/Red
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			





LT Environmental, Inc.

3300 North "A" Street
Building 1, Unit 103
Midland, Texas 79705
432.704.5178

August 1, 2019
Mr. Mike Bratcher
New Mexico Oil Conservation Division
811 South First Street
Artesia, New Mexico 88210

**RE: Sampling Variance Request
Remuda 25 Observation Well #1
XTO Energy, Inc.
Remediation Permit Number 2RP-5309
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Sampling Variance Request to document initial response activities and propose alternative closure sampling to confirm the remediation of impacted soil at the Remuda 25 Observation Well #1 (Site) in Unit Letter E, Section 25, Township 23 South, Range 29 East, in Eddy County, New Mexico (Figure 1). The sampling described is designed to evaluate remediation progress and propose a variance to the New Mexico Oil Conservation Division (NMOCD) confirmation sampling requirements in 19.15.29.12.D(3) of the New Mexico Administrative Code (NMAC).

BACKGROUND

Impacts to soil at the Remuda 25 Observation Well #1 were caused by a crude oil and produced water release discovered on February 28, 2019. NMOCD was notified via email and subsequently issued Remediation Permit number 2RP-2309 for the release. Approximately 915 barrels of crude oil and 2,746 barrels of produced water were released due to a pressure kick while drilling at the Remuda 25 Observation Well #1. An accumulation of water, gas, and oil was encountered at a depth of 317 feet. The well flowed for approximately three hours before the pressure zone was depleted. XTO recovered 199 barrels of crude oil and 596 barrels of produced water. Approximately 74,350 square feet of the pad, lease road and surrounding pasture were impacted. In addition, 77,460 square feet of pasture was impacted by overspray.

SITE CHARACTERIZATION

Depth to groundwater at the Site is estimated to be between 50 feet and 100 feet below ground surface (bgs) based on the nearest water well data and known aquifer properties. The nearest permitted water well, USGS 321717103561001, is 0.8 miles from the site. Depth to groundwater in the well is 52 feet bgs and was completed in the Rustler Formation. The Site is located greater





than 300 feet from any continuously flowing watercourse, 200 feet from any lakebed, sinkhole, or playa lake, and greater than 300 feet from a permanent residence, school, hospital, institution, church, or wetland. The Site is greater than 500 feet from a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes and greater than 1,000 feet from a freshwater well or spring. The Site is in a medium potential karst area and not within the 100-year floodplain or overlying a subsurface mine. Based on characterization of the site, the following NMOCD Table 1 Criteria apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 1,000 mg/kg gasoline range organics (GRO) and diesel range organics (DRO); 2,500 mg/kg total petroleum hydrocarbons (TPH); and 10,000 mg/kg chloride.

INITIAL RESPONSE

On March 1, 2019, LTE personnel inspected the Site to evaluate the release extent. The release extent was mapped using a handheld Global Positioning System (GPS) unit and is depicted on Figure 2. LTE personnel collected three preliminary soil samples (SS01 through SS03) within the release area from depths ranging from 0.5 feet to 4 feet bgs to begin assessment of the vertical and lateral extent of soil impacts. The soil samples were screened for volatile aromatic hydrocarbons and chloride using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples were shipped at 4 degrees Celsius (°C) under strict chain-of-custody procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of benzene, toluene, ethyl-benzene, and total xylenes (BTEX) using United States Environmental Protection Agency (USEPA) Method 8021; total petroleum hydrocarbons (TPH) – gasoline range organics (GRO), diesel range organics (DRO), and oil range organics (ORO) by USEPA Method 8015; and chloride by USEPA Method 300.0.

Initial assessment and analytical results of surface samples indicate that soil was impacted by both hydrocarbons and chlorides at depths ranging from 0.5 feet up to 3 feet bgs. Based on the analytical results depicted in Figure 2 as well as the mapped release extent, LTE estimates approximately 4,275 cubic yards of soil will need to be excavated from the site to meet NMOCD Table 1 Closure Criteria.

PROPOSED SAMPLING

Additional assessment, delineation, and excavation is necessary at the Site. XTO is requesting a variance to the 200-square foot confirmation sampling requirement for the area to be excavated, which would require an estimated 375 floor samples within the release extent and an additional estimated 390 floor samples in the overspray area. These numbers do not include sidewalls. Due to the large size the affected area, LTE proposes increasing the confirmation sampling size to a 2,500-square foot area and collecting a 5-point composite sample to represent each 2,500-square foot area. An estimated 65 samples will be collected from the





Bratcher, M.
Page 3

excavation floor to address the release extent and an additional estimated 45 samples will be collected to address the overspray area. The attached Figure 3 illustrates the proposed sampling grids overlaying the release footprint and overspray area. Each square in the grid represents a 2,500 square foot composite sample area. Figure 3 does not illustrate sidewall sample locations, which will also be collected to represent 2,500 square feet sampling areas.

The soil samples will be placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples will be shipped at 4 °C under strict chain-of-custody procedures to Xenco in Midland, Texas, for analysis of BTEX using USEPA Method 8021; TPH –GRO, DRO, and ORO by USEPA Method 8015; and chloride by USEPA Method 300.0.

SCOPE OF WORK

XTO received a right of entry permit (ROE) from the New Mexico State Land Office (SLO) on July 18, 2019. LTE has begun further site assessment through delineation of the release extent. LTE will use field screening results as well as laboratory analysis to direct excavation progress and supervise excavation activities.

The current deadline for submitting a remediation work plan or closure report required in 19.15.29.12.B.(1) NMAC is September 29, 2019. LTE will provide a report by that deadline. The report will include a site map illustrating the location of the excavations, soil sample locations, and sample analytical results.

LTE appreciates the opportunity to provide this sampling plan to the NMOCD. We look forward to approval of the variance request. If you have any questions or comments, please do not hesitate to contact Ashley L. Ager at (970) 946-1093 or aager@ltenv.com.

Sincerely,

A handwritten signature in black ink that reads 'T Morrissey'.

Tacoma Morrissey
Staff Geologist

A handwritten signature in black ink that reads 'Ashley L. Ager'.

Ashley L. Ager, P.G.
Senior Geologist

Attachments:

Figure 1 – Site Location Map

Figure 2 – Soil Sample Locations

Figure 3 – Proposed Grid Sampling

Table 1 – Analytical Results



FIGURES



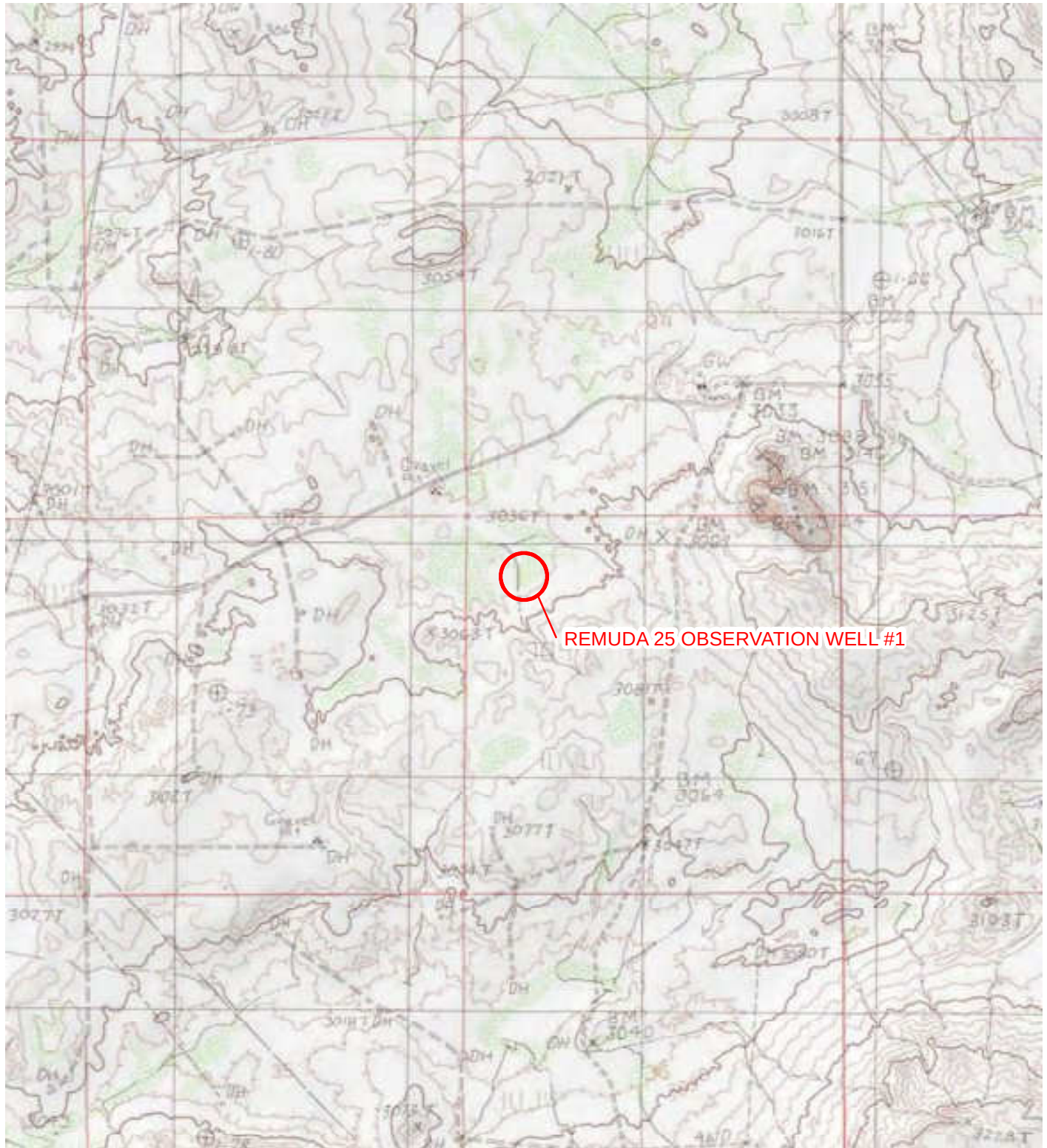
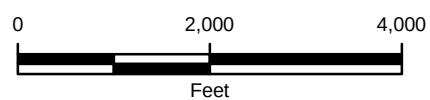
**LEGEND** SITE LOCATION

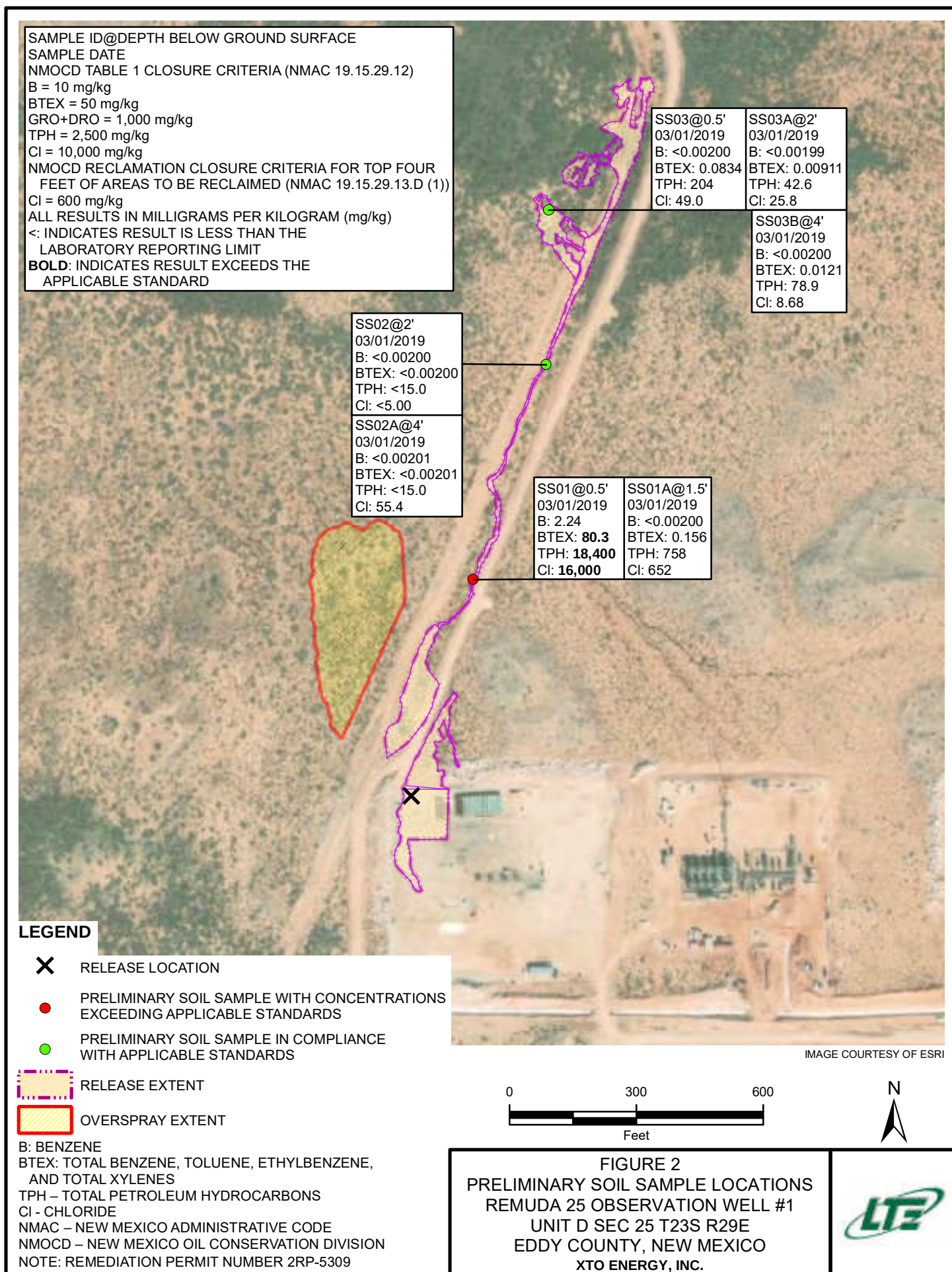
IMAGE COURTESY OF ESRI/USGS

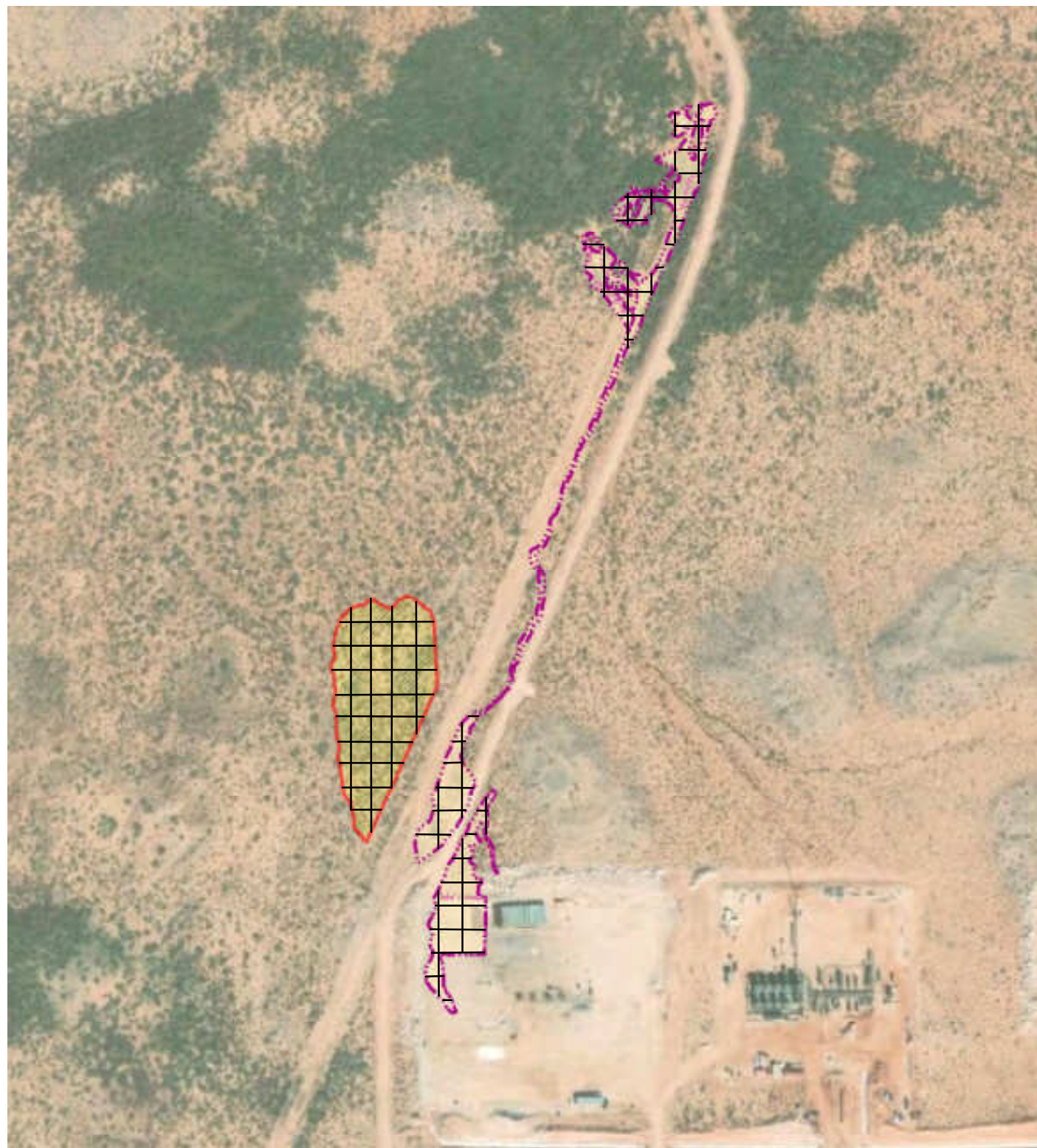


NOTE: REMEDIATION PERMIT
NUMBER 2RP-5309

FIGURE 1
SITE LOCATION MAP
REMUDA 25 OBSERVATION WELL #1
UNIT D SEC 25 T23S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.





**LEGEND**

-  RELEASE EXTENT
 OVERSPRAY EXTENT
 2,500 SQUARE FOOT GRID

IMAGE COURTESY OF ESRI

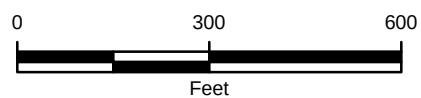


FIGURE 3
 SAMPLING 2,500 SQUARE FOOT GRID MAP
 REMUDA 25 OBSERVATION WELL #1
 UNIT D SEC 25 T23S R29E
 EDDY COUNTY, NEW MEXICO
 XTO ENERGY, INC.



NOTE: REMEDIATION PERMIT NUMBER 2RP-5309

TABLES



TABLE 1
SOIL ANALYTICAL RESULTS

REMUDA 25 OBSERVATION WELL #1
REMEDATION PERMIT NUMBER 2RP-5309
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS01	0.5	03/01/2019	2.24	23.3	4.59	50.2	80.3	7,200	10,000	1,170	17,200	18,400	16,000
SS02	2	03/01/2019	<0.00200	0.00361	0.00505	0.0747	0.0834	25.1	161	17.6	186	204	49.0
SS03	0.5	03/01/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
SS01A	1.5	03/01/2019	<0.00201	0.00568	0.0427	0.140	0.156	158	544	56.3	702	758	652
SS02A	4	03/01/2019	<0.00200	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	55.4
SS03A	2	03/01/2019	<0.00199	<0.00199	<0.00199	0.00911	0.00911	<15.0	42.6	<15.0	42.6	42.6	25.8
SS03B	4	03/01/2019	<0.00200	<0.00200	<0.00200	0.0121	0.0121	<14.9	78.9	<14.9	78.9	78.9	8.68
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

mg/kg - milligrams per kilogram

NE - not established

NMOCD - New Mexico Oil Conservation Division

DRO - diesel range organics

GRO - gasoline range organics

ORO - oil range organics

TPH - total petroleum hydrocarbons

< - indicates result is below
laboratory reporting limits

Bold- indicates result exceeds the applicable regulatory
standard

* - indicates sample was collected in area to be reclaimed
after remediation is complete; closure criteria for chloride
concentration in the top 4 feet of soil is 600 mg/kg

Table 1 - closure criteria for soils impacted by a release per

NMAC 19.15.29 August 2018 NMAC -New Mexico Administrative Code



ATTACHMENT 4 : LABORATORY ANALYTICAL REPORTS



Analytical Report 616466

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Remuda 25 Observation Well #1

012919028

06-MAR-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)



06-MAR-19

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **616466**

Remuda 25 Observation Well #1

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) 616466. 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. 616466 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

**Sample Cross Reference 616466****LT Environmental, Inc., Arvada, CO**

Remuda 25 Observation Well #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	03-01-19 13:15	0.5 ft	616466-001
SS01A	S	03-01-19 13:20	1.5 ft	616466-002
SS02	S	03-01-19 13:40	2 ft	616466-003
SS02A	S	03-01-19 13:50	4 ft	616466-004
SS03	S	03-01-19 14:30	0.5 ft	616466-005
SS03A	S	03-01-19 14:40	2 ft	616466-006
SS03B	S	03-01-19 14:50	4 ft	616466-007



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 25 Observation Well #1

Project ID: 012919028
Work Order Number(s): 616466

Report Date: 06-MAR-19
Date Received: 03/05/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3081206 BTEX by EPA 8021B

Surrogate 1,4-Difluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 616466-001.

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

Batch: LBA-3081290 TPH by SW8015 Mod

Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 616466-001.



Certificate of Analysis Summary 616466

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Observation Well #1

Project Id: 012919028
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Tue Mar-05-19 02:00 pm
Report Date: 06-MAR-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	616466-001	616466-002	616466-003	616466-004	616466-005	616466-006
	Field Id:	SS01	SS01A	SS02	SS02A	SS03	SS03A
	Depth:	0.5- ft	1.5- ft	2- ft	4- ft	0.5- ft	2- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Mar-01-19 13:15	Mar-01-19 13:20	Mar-01-19 13:40	Mar-01-19 13:50	Mar-01-19 14:30	Mar-01-19 14:40
Alkalinity by SM2320B SUB: T104704215-19-29	Extracted:	Mar-06-19 11:00	Mar-06-19 11:00	Mar-06-19 11:00	Mar-06-19 11:00	Mar-06-19 11:00	Mar-06-19 11:00
	Analyzed:	Mar-06-19 12:21	Mar-06-19 12:34	Mar-06-19 12:41	Mar-06-19 12:47	Mar-06-19 12:53	Mar-06-19 12:59
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Alkalinity, Total (CaCO ₃)		269 40.0	358 40.0	1050 40.0	980 40.0	872 40.0	458 40.0
BTEX by EPA 8021B	Extracted:	Mar-05-19 14:30	Mar-05-19 14:30	Mar-05-19 14:30	Mar-05-19 14:30	Mar-05-19 14:30	Mar-05-19 14:30
	Analyzed:	Mar-06-19 01:37	Mar-06-19 00:54	Mar-05-19 22:46	Mar-05-19 23:07	Mar-05-19 23:50	Mar-05-19 23:28
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		2.24 0.199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199
Toluene		23.3 0.199	0.00568 0.00200	<0.00200 0.00200	<0.00201 0.00201	0.00361 0.00200	<0.00199 0.00199
Ethylbenzene		4.59 0.199	0.00993 0.00200	<0.00200 0.00200	<0.00201 0.00201	0.00505 0.00200	<0.00199 0.00199
m,p-Xylenes		38.3 0.398	0.0976 0.00399	<0.00399 0.00399	<0.00402 0.00402	0.0528 0.00401	0.00911 0.00398
o-Xylene		11.9 0.199	0.0427 0.00200	<0.00200 0.00200	<0.00201 0.00201	0.0219 0.00200	<0.00199 0.00199
Total Xylenes		50.2 0.199	0.140 0.00200	<0.00200 0.00200	<0.00201 0.00201	0.0747 0.00200	0.00911 0.00199
Total BTEX		80.3 0.199	0.156 0.00200	<0.00200 0.00200	<0.00201 0.00201	0.0834 0.00200	0.00911 0.00199
Inorganic Anions by EPA 300	Extracted:	Mar-05-19 16:00	Mar-05-19 16:00	Mar-05-19 16:00	Mar-05-19 16:00	Mar-05-19 16:00	Mar-05-19 16:00
	Analyzed:	Mar-06-19 12:08	Mar-06-19 12:14	Mar-06-19 10:38	Mar-06-19 12:21	Mar-06-19 13:00	Mar-06-19 13:06
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		16000 250	652 4.99	<5.00 5.00	55.4 4.99	49.0 4.95	25.8 4.95
TPH by SW8015 Mod	Extracted:	Mar-05-19 16:00	Mar-05-19 16:00	Mar-05-19 16:00	Mar-05-19 16:00	Mar-05-19 16:00	Mar-05-19 16:00
	Analyzed:	Mar-06-19 11:03	Mar-06-19 05:58	Mar-06-19 06:18	Mar-06-19 06:39	Mar-06-19 06:59	Mar-06-19 07:19
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		7200 74.8	158 15.0	<15.0 15.0	<15.0 15.0	25.1 15.0	<15.0 15.0
Diesel Range Organics (DRO)		10000 74.8	544 15.0	<15.0 15.0	<15.0 15.0	161 15.0	42.6 15.0
Motor Oil Range Hydrocarbons (MRO)		1170 74.8	56.3 15.0	<15.0 15.0	<15.0 15.0	17.6 15.0	<15.0 15.0
Total TPH		18400 74.8	758 15.0	<15.0 15.0	<15.0 15.0	204 15.0	42.6 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

Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 616466

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Observation Well #1



Project Id: 012919028
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Tue Mar-05-19 02:00 pm
Report Date: 06-MAR-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id: 616466-007 Field Id: SS03B Depth: 4- ft Matrix: SOIL Sampled: Mar-01-19 14:50					
Alkalinity by SM2320B SUB: T104704215-19-29	Extracted: Mar-06-19 11:00 Analyzed: Mar-06-19 13:19 Units/RL: mg/kg RL					
Alkalinity, Total (CaCO ₃)	801 40.0					
BTEX by EPA 8021B	Extracted: Mar-05-19 14:30 Analyzed: Mar-06-19 00:11 Units/RL: mg/kg RL					
Benzene	<0.00200 0.00200					
Toluene	<0.00200 0.00200					
Ethylbenzene	<0.00200 0.00200					
m,p-Xylenes	0.0121 0.00399					
o-Xylene	<0.00200 0.00200					
Total Xylenes	0.0121 0.00200					
Total BTEX	0.0121 0.00200					
Inorganic Anions by EPA 300	Extracted: Mar-05-19 16:00 Analyzed: Mar-06-19 13:13 Units/RL: mg/kg RL					
Chloride	8.68 5.00					
TPH by SW8015 Mod	Extracted: Mar-05-19 16:00 Analyzed: Mar-06-19 07:40 Units/RL: mg/kg RL					
Gasoline Range Hydrocarbons (GRO)	<14.9 14.9					
Diesel Range Organics (DRO)	78.9 14.9					
Motor Oil Range Hydrocarbons (MRO)	<14.9 14.9					
Total TPH	78.9 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

Version: 1.0%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 616466



LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #1

Sample Id: **SS01** Matrix: Soil Date Received: 03.05.19 14.00
 Lab Sample Id: 616466-001 Date Collected: 03.01.19 13.15 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 03.05.19 16.00 Basis: Wet Weight
 Seq Number: 3081259

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16000	250	mg/kg	03.06.19 12.08		50

Analytical Method: Alkalinity by SM2320B Prep Method: SM2320P
 Tech: YAV % Moisture:
 Analyst: YAV Date Prep: 03.06.19 11.00 Basis: Wet Weight
 Seq Number: 3081270 SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	269	40.0	mg/kg	03.06.19 12.21		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 03.05.19 16.00 Basis: Wet Weight
 Seq Number: 3081290

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	7200	74.8	mg/kg	03.06.19 11.03		5
Diesel Range Organics (DRO)	C10C28DRO	10000	74.8	mg/kg	03.06.19 11.03		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	1170	74.8	mg/kg	03.06.19 11.03		5
Total TPH	PHC635	18400	74.8	mg/kg	03.06.19 11.03		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	03.06.19 11.03	
o-Terphenyl	84-15-1	242	%	70-135	03.06.19 11.03	**



Certificate of Analytical Results 616466



LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #1

Sample Id: **SS01**
 Lab Sample Id: 616466-001

Matrix: Soil
 Date Collected: 03.01.19 13.15

Date Received: 03.05.19 14.00
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 03.05.19 14.30

Basis: Wet Weight

Seq Number: 3081206

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	2.24	0.199	mg/kg	03.06.19 01.37		100
Toluene	108-88-3	23.3	0.199	mg/kg	03.06.19 01.37		100
Ethylbenzene	100-41-4	4.59	0.199	mg/kg	03.06.19 01.37		100
m,p-Xylenes	179601-23-1	38.3	0.398	mg/kg	03.06.19 01.37		100
o-Xylene	95-47-6	11.9	0.199	mg/kg	03.06.19 01.37		100
Total Xylenes	1330-20-7	50.2	0.199	mg/kg	03.06.19 01.37		100
Total BTEX		80.3	0.199	mg/kg	03.06.19 01.37		100
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	156	%	70-130	03.06.19 01.37	**	
4-Bromofluorobenzene	460-00-4	115	%	70-130	03.06.19 01.37		



Certificate of Analytical Results 616466



LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #1

Sample Id: **SS01A** Matrix: Soil Date Received: 03.05.19 14.00
 Lab Sample Id: 616466-002 Date Collected: 03.01.19 13.20 Sample Depth: 1.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 03.05.19 16.00 Basis: Wet Weight
 Seq Number: 3081259

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	652	4.99	mg/kg	03.06.19 12.14		1

Analytical Method: Alkalinity by SM2320B Prep Method: SM2320P
 Tech: YAV % Moisture:
 Analyst: YAV Date Prep: 03.06.19 11.00 Basis: Wet Weight
 Seq Number: 3081270 SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	358	40.0	mg/kg	03.06.19 12.34		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 03.05.19 16.00 Basis: Wet Weight
 Seq Number: 3081290

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	158	15.0	mg/kg	03.06.19 05.58		1
Diesel Range Organics (DRO)	C10C28DRO	544	15.0	mg/kg	03.06.19 05.58		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	56.3	15.0	mg/kg	03.06.19 05.58		1
Total TPH	PHC635	758	15.0	mg/kg	03.06.19 05.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	03.06.19 05.58	
o-Terphenyl	84-15-1	112	%	70-135	03.06.19 05.58	



Certificate of Analytical Results 616466



LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #1

Sample Id: **SS01A**
 Lab Sample Id: 616466-002

Matrix: Soil
 Date Collected: 03.01.19 13.20

Date Received: 03.05.19 14.00
 Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 03.05.19 14.30

Basis: Wet Weight

Seq Number: 3081206

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.06.19 00.54	U	1
Toluene	108-88-3	0.00568	0.00200	mg/kg	03.06.19 00.54		1
Ethylbenzene	100-41-4	0.00993	0.00200	mg/kg	03.06.19 00.54		1
m,p-Xylenes	179601-23-1	0.0976	0.00399	mg/kg	03.06.19 00.54		1
o-Xylene	95-47-6	0.0427	0.00200	mg/kg	03.06.19 00.54		1
Total Xylenes	1330-20-7	0.140	0.00200	mg/kg	03.06.19 00.54		1
Total BTEX		0.156	0.00200	mg/kg	03.06.19 00.54		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	123	%	70-130	03.06.19 00.54		
1,4-Difluorobenzene	540-36-3	117	%	70-130	03.06.19 00.54		



Certificate of Analytical Results 616466



LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #1

Sample Id: **SS02** Matrix: Soil Date Received: 03.05.19 14.00
 Lab Sample Id: 616466-003 Date Collected: 03.01.19 13.40 Sample Depth: 2 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 03.05.19 16.00 Basis: Wet Weight
 Seq Number: 3081259

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	03.06.19 10.38	U	1

Analytical Method: Alkalinity by SM2320B Prep Method: SM2320P
 Tech: YAV % Moisture:
 Analyst: YAV Date Prep: 03.06.19 11.00 Basis: Wet Weight
 Seq Number: 3081270 SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	1050	40.0	mg/kg	03.06.19 12.41		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 03.05.19 16.00 Basis: Wet Weight
 Seq Number: 3081290

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.06.19 06.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.06.19 06.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.06.19 06.18	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.06.19 06.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	03.06.19 06.18	
o-Terphenyl	84-15-1	94	%	70-135	03.06.19 06.18	



Certificate of Analytical Results 616466



LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #1

Sample Id: **SS02**
 Lab Sample Id: 616466-003

Matrix: Soil
 Date Collected: 03.01.19 13.40

Date Received: 03.05.19 14.00
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 03.05.19 14.30

Basis: Wet Weight

Seq Number: 3081206

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.05.19 22.46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.05.19 22.46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.05.19 22.46	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.05.19 22.46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.05.19 22.46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.05.19 22.46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.05.19 22.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	03.05.19 22.46		
4-Bromofluorobenzene	460-00-4	108	%	70-130	03.05.19 22.46		



Certificate of Analytical Results 616466

LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #1

Sample Id: **SS02A** Matrix: Soil Date Received: 03.05.19 14.00
 Lab Sample Id: 616466-004 Date Collected: 03.01.19 13.50 Sample Depth: 4 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 03.05.19 16.00 Basis: Wet Weight
 Seq Number: 3081259

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	55.4	4.99	mg/kg	03.06.19 12.21		1

Analytical Method: Alkalinity by SM2320B Prep Method: SM2320P
 Tech: YAV % Moisture:
 Analyst: YAV Date Prep: 03.06.19 11.00 Basis: Wet Weight
 Seq Number: 3081270 SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	980	40.0	mg/kg	03.06.19 12.47		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 03.05.19 16.00 Basis: Wet Weight
 Seq Number: 3081290

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.06.19 06.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.06.19 06.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.06.19 06.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.06.19 06.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	03.06.19 06.39	
o-Terphenyl	84-15-1	95	%	70-135	03.06.19 06.39	



Certificate of Analytical Results 616466



LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #1

Sample Id: **SS02A**
 Lab Sample Id: 616466-004

Matrix: Soil
 Date Collected: 03.01.19 13.50

Date Received: 03.05.19 14.00
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 03.05.19 14.30

Basis: Wet Weight

Seq Number: 3081206

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.05.19 23.07	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.05.19 23.07	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.05.19 23.07	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.05.19 23.07	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.05.19 23.07	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.05.19 23.07	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.05.19 23.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	112	%	70-130	03.05.19 23.07		
4-Bromofluorobenzene	460-00-4	109	%	70-130	03.05.19 23.07		



Certificate of Analytical Results 616466



LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #1

Sample Id: **SS03** Matrix: Soil Date Received: 03.05.19 14.00
 Lab Sample Id: 616466-005 Date Collected: 03.01.19 14.30 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 03.05.19 16.00 Basis: Wet Weight
 Seq Number: 3081259

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	49.0	4.95	mg/kg	03.06.19 13.00		1

Analytical Method: Alkalinity by SM2320B Prep Method: SM2320P
 Tech: YAV % Moisture:
 Analyst: YAV Date Prep: 03.06.19 11.00 Basis: Wet Weight
 Seq Number: 3081270 SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	872	40.0	mg/kg	03.06.19 12.53		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 03.05.19 16.00 Basis: Wet Weight
 Seq Number: 3081290

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	25.1	15.0	mg/kg	03.06.19 06.59		1
Diesel Range Organics (DRO)	C10C28DRO	161	15.0	mg/kg	03.06.19 06.59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	17.6	15.0	mg/kg	03.06.19 06.59		1
Total TPH	PHC635	204	15.0	mg/kg	03.06.19 06.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	03.06.19 06.59	
o-Terphenyl	84-15-1	112	%	70-135	03.06.19 06.59	



Certificate of Analytical Results 616466



LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #1

Sample Id: **SS03**
 Lab Sample Id: 616466-005

Matrix: Soil
 Date Collected: 03.01.19 14.30

Date Received: 03.05.19 14.00
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3081206

Date Prep: 03.05.19 14.30

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	03.05.19 23.50	U	1
Toluene	108-88-3	0.00361	0.00200	mg/kg	03.05.19 23.50		1
Ethylbenzene	100-41-4	0.00505	0.00200	mg/kg	03.05.19 23.50		1
m,p-Xylenes	179601-23-1	0.0528	0.00401	mg/kg	03.05.19 23.50		1
o-Xylene	95-47-6	0.0219	0.00200	mg/kg	03.05.19 23.50		1
Total Xylenes	1330-20-7	0.0747	0.00200	mg/kg	03.05.19 23.50		1
Total BTEX		0.0834	0.00200	mg/kg	03.05.19 23.50		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	124	%	70-130	03.05.19 23.50		
4-Bromofluorobenzene	460-00-4	130	%	70-130	03.05.19 23.50		



Certificate of Analytical Results 616466



LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #1

Sample Id: **SS03A** Matrix: Soil Date Received: 03.05.19 14.00
 Lab Sample Id: 616466-006 Date Collected: 03.01.19 14.40 Sample Depth: 2 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 03.05.19 16.00 Basis: Wet Weight
 Seq Number: 3081259

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	25.8	4.95	mg/kg	03.06.19 13.06		1

Analytical Method: Alkalinity by SM2320B Prep Method: SM2320P
 Tech: YAV % Moisture:
 Analyst: YAV Date Prep: 03.06.19 11.00 Basis: Wet Weight
 Seq Number: 3081270 SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	458	40.0	mg/kg	03.06.19 12.59		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 03.05.19 16.00 Basis: Wet Weight
 Seq Number: 3081290

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.06.19 07.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	42.6	15.0	mg/kg	03.06.19 07.19		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.06.19 07.19	U	1
Total TPH	PHC635	42.6	15.0	mg/kg	03.06.19 07.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	03.06.19 07.19	
o-Terphenyl	84-15-1	97	%	70-135	03.06.19 07.19	



Certificate of Analytical Results 616466



LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #1

Sample Id: **SS03A**
 Lab Sample Id: 616466-006

Matrix: Soil
 Date Collected: 03.01.19 14.40

Date Received: 03.05.19 14.00
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 03.05.19 14.30

Basis: Wet Weight

Seq Number: 3081206

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.05.19 23.28	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.05.19 23.28	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.05.19 23.28	U	1
m,p-Xylenes	179601-23-1	0.00911	0.00398	mg/kg	03.05.19 23.28		1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.05.19 23.28	U	1
Total Xylenes	1330-20-7	0.00911	0.00199	mg/kg	03.05.19 23.28		1
Total BTEX		0.00911	0.00199	mg/kg	03.05.19 23.28		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	03.05.19 23.28		
1,4-Difluorobenzene	540-36-3	109	%	70-130	03.05.19 23.28		



Certificate of Analytical Results 616466



LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #1

Sample Id: **SS03B** Matrix: Soil Date Received: 03.05.19 14.00
 Lab Sample Id: 616466-007 Date Collected: 03.01.19 14.50 Sample Depth: 4 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 03.05.19 16.00 Basis: Wet Weight
 Seq Number: 3081259

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.68	5.00	mg/kg	03.06.19 13.13		1

Analytical Method: Alkalinity by SM2320B Prep Method: SM2320P
 Tech: YAV % Moisture:
 Analyst: YAV Date Prep: 03.06.19 11.00 Basis: Wet Weight
 Seq Number: 3081270 SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	801	40.0	mg/kg	03.06.19 13.19		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 03.05.19 16.00 Basis: Wet Weight
 Seq Number: 3081290

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	03.06.19 07.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	78.9	14.9	mg/kg	03.06.19 07.40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	03.06.19 07.40	U	1
Total TPH	PHC635	78.9	14.9	mg/kg	03.06.19 07.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	03.06.19 07.40	
o-Terphenyl	84-15-1	94	%	70-135	03.06.19 07.40	



Certificate of Analytical Results 616466



LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #1

Sample Id: **SS03B**
 Lab Sample Id: 616466-007

Matrix: Soil
 Date Collected: 03.01.19 14.50

Date Received: 03.05.19 14.00
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3081206

Date Prep: 03.05.19 14.30

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	03.06.19 00.11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.06.19 00.11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.06.19 00.11	U	1
m,p-Xylenes	179601-23-1	0.0121	0.00399	mg/kg	03.06.19 00.11		1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.06.19 00.11	U	1
Total Xylenes	1330-20-7	0.0121	0.00200	mg/kg	03.06.19 00.11		1
Total BTEX		0.0121	0.00200	mg/kg	03.06.19 00.11		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	115	%	70-130	03.06.19 00.11		
4-Bromofluorobenzene	460-00-4	115	%	70-130	03.06.19 00.11		



Flagging Criteria



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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Remuda 25 Observation Well #1

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3081259

MB Sample Id: 7673028-1-BLK

Matrix: Solid

LCS Sample Id: 7673028-1-BKS

Prep Method: E300P

Date Prep: 03.05.19

LCSD Sample Id: 7673028-1-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	252	101	244	98	90-110	3	20	mg/kg	03.06.19 10:25	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3081259

Parent Sample Id: 616466-003

Matrix: Soil

MS Sample Id: 616466-003 S

Prep Method: E300P

Date Prep: 03.05.19

MSD Sample Id: 616466-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.25	250	257	102	263	104	90-110	2	20	mg/kg	03.06.19 10:45	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3081259

Parent Sample Id: 616466-004

Matrix: Soil

MS Sample Id: 616466-004 S

Prep Method: E300P

Date Prep: 03.05.19

MSD Sample Id: 616466-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	55.4	250	325	108	314	103	90-110	3	20	mg/kg	03.06.19 12:27	

Analytical Method: Alkalinity by SM2320B

Seq Number: 3081270

MB Sample Id: 7673066-1-BLK

Matrix: Solid

LCS Sample Id: 7673066-1-BKS

Prep Method: SM2320P

Date Prep: 03.06.19

LCSD Sample Id: 7673066-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Alkalinity, Total (CaCO3)	<40.0	2500	2470	99	2500	100	80-120	1	20	mg/kg	03.06.19 12:08	

Analytical Method: Alkalinity by SM2320B

Seq Number: 3081270

Parent Sample Id: 616466-001

Matrix: Soil

MD Sample Id: 616466-001 D

Prep Method: SM2320P

Date Prep: 03.06.19

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Alkalinity, Total (CaCO3)	269	272	1	20	mg/kg	03.06.19 12:28	

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

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

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

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



LT Environmental, Inc.
Remuda 25 Observation Well #1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3081290

MB Sample Id: 7673036-1-BLK

Matrix: Solid

LCS Sample Id: 7673036-1-BKS

Prep Method: TX1005P

Date Prep: 03.05.19

LCSD Sample Id: 7673036-1-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	991	99	972	97	70-135	2	20	mg/kg	03.06.19 00:37	
Diesel Range Organics (DRO)	<8.13	1000	973	97	979	98	70-135	1	20	mg/kg	03.06.19 00:37	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	83		123		120		70-135	%	03.06.19 00:37			
o-Terphenyl	85		106		102		70-135	%	03.06.19 00:37			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3081290

Parent Sample Id: 616452-021

Matrix: Soil

MS Sample Id: 616452-021 S

Prep Method: TX1005P

Date Prep: 03.05.19

MSD Sample Id: 616452-021 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	928	93	922	92	70-135	1	20	mg/kg	03.06.19 01:37	
Diesel Range Organics (DRO)	<8.12	999	929	93	940	94	70-135	1	20	mg/kg	03.06.19 01:37	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			114		118		70-135	%	03.06.19 01:37			
o-Terphenyl			101		100		70-135	%	03.06.19 01:37			

Analytical Method: BTEX by EPA 8021B

Seq Number: 3081206

MB Sample Id: 7673016-1-BLK

Matrix: Solid

LCS Sample Id: 7673016-1-BKS

Prep Method: SW5030B

Date Prep: 03.05.19

LCSD Sample Id: 7673016-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.101	101	0.104	104	70-130	3	35	mg/kg	03.05.19 15:37	
Toluene	<0.00200	0.100	0.107	107	0.110	110	70-130	3	35	mg/kg	03.05.19 15:37	
Ethylbenzene	<0.00200	0.100	0.124	124	0.130	130	70-130	5	35	mg/kg	03.05.19 15:37	
m,p-Xylenes	<0.00401	0.200	0.225	113	0.232	116	70-130	3	35	mg/kg	03.05.19 15:37	
o-Xylene	<0.00200	0.100	0.120	120	0.125	125	70-130	4	35	mg/kg	03.05.19 15:37	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1,4-Difluorobenzene	103		118		105		70-130	%	03.05.19 15:37			
4-Bromofluorobenzene	94		100		108		70-130	%	03.05.19 15:37			

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.
Remuda 25 Observation Well #1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3081206

Parent Sample Id: 616046-001

Matrix: Soil

MS Sample Id: 616046-001 S

Prep Method: SW5030B

Date Prep: 03.05.19

MSD Sample Id: 616046-001 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	0.0786	79	0.0690	69	70-130	13	35	mg/kg	03.05.19 16:20	X
Toluene	<0.00200	0.0998	0.0808	81	0.0697	70	70-130	15	35	mg/kg	03.05.19 16:20	
Ethylbenzene	<0.00200	0.0998	0.0877	88	0.0748	75	70-130	16	35	mg/kg	03.05.19 16:20	
m,p-Xylenes	<0.00399	0.200	0.156	78	0.127	64	70-130	20	35	mg/kg	03.05.19 16:20	X
o-Xylene	<0.00200	0.0998	0.0834	84	0.0688	69	70-130	19	35	mg/kg	03.05.19 16:20	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		105		70-130	%	03.05.19 16:20
4-Bromofluorobenzene	107		112		70-130	%	03.05.19 16:20

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

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 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: 1016400

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:	Adrian Baker	Bill to: (if different)	Kyle Liffell
Company Name:	LT Environmental, Inc., Permian Office	Company Name:	XTO Energy
Address:	3300 North "A" St	Address:	3104 E. Green St
City, State ZIP:	Midland, Tx 79705	City, State ZIP:	Midland, NM 88220
Phone:	432.704.5178	Email:	abaker@xenco.com

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

Project Name:	Renu da 25 Observation Well	Turn Around	☐
Project Number:	012919028	Rush: Same day	☐
P.O. Number:		Due Date:	
Sampler's Name:	Anna Byers		

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Well Ice:	Yes ☒ No ☐
Temperature (°C):	5.5/5.4	Thermometer ID:	PB -0.1	
Received Intact:	Yes ☒ No ☐	Correction Factor:		
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 8021)	Chloride (EPA 800.0)	ALKALINITY CaCO ₃	Analysis Request	Work Order Notes
8501	S	3/1/19	13:15	0.5'	1						
5501A	S	3/1/19	13:20	1.5'	1						hot
5502A	S	3/1/19	13:40	2'	1						hot
5503	S	3/1/19	14:30	0.5'	1						hot
5503A	S	3/1/19	14:40	2'	1						
5503B	S	3/1/19	14:50	4'	1						

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
Anna Byers	[Signature]	3/1/19 14:00			



Inter-Office Shipment

Page 1 of 1

IOS Number : **123686**

Date/Time: 03/05/19 14:57

Created by: Katie Lowe

Please send report to: Jessica Kramer

Lab# From: **Midland**

Delivery Priority:

Address: 1211 W. Florida Ave

Lab# To: **Houston**

Air Bill No.: 774627847699

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
616466-001	S	SS01	03/01/19 13:15	SM2320B	Alkalinity by SM2320B	03/06/19	03/15/19	JKR	ALK	
616466-002	S	SS01A	03/01/19 13:20	SM2320B	Alkalinity by SM2320B	03/06/19	03/15/19	JKR	ALK	
616466-003	S	SS02	03/01/19 13:40	SM2320B	Alkalinity by SM2320B	03/06/19	03/15/19	JKR	ALK	
616466-004	S	SS02A	03/01/19 13:50	SM2320B	Alkalinity by SM2320B	03/06/19	03/15/19	JKR	ALK	
616466-005	S	SS03	03/01/19 14:30	SM2320B	Alkalinity by SM2320B	03/06/19	03/15/19	JKR	ALK	
616466-006	S	SS03A	03/01/19 14:40	SM2320B	Alkalinity by SM2320B	03/06/19	03/15/19	JKR	ALK	
616466-007	S	SS03B	03/01/19 14:50	SM2320B	Alkalinity by SM2320B	03/06/19	03/15/19	JKR	ALK	

Inter Office Shipment or Sample Comments:

Relinquished By:

Katie Lowe

Received By:

Monica Shakhshir

Date Relinquished: 03/05/2019

Date Received: 03/06/2019 09:50

Cooler Temperature: 2.6



Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 123686

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sent By: Katie Lowe

Date Sent: 03/05/2019 02:57 PM

Received By: Monica Shakhshir

Date Received: 03/06/2019 09:50 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Monica Shakhshir

Date: 03/06/2019



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03/05/2019 02:00:00 PM

Work Order #: 616466

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

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)?	Yes Xenco Stafford
#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:

Katie Lowe

Date: 03/05/2019

Checklist reviewed by:

Jessica Kramer

Date: 03/05/2019

Analytical Report 631897

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda 25 Obs Well #1

29-JUL-19

Collected By: Client



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

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

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)



29-JUL-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **631897**

Remuda 25 Obs Well #1

Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 631897. 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. 631897 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

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 631897****LT Environmental, Inc., Arvada, CO**

Remuda 25 Obs Well #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	07-23-19 09:50	1 ft	631897-001
PH01A	S	07-23-19 10:15	6 ft	631897-002
PH02	S	07-23-19 11:30	1 ft	631897-003
PH02A	S	07-23-19 12:20	6 ft	631897-004
PH03	S	07-23-19 13:40	1 ft	631897-005
PH03A	S	07-23-19 13:55	4 ft	631897-006
PH04	S	07-23-19 14:30	3 ft	631897-007
PH04A	S	07-23-19 14:35	4 ft	631897-008
PH05	S	07-23-19 15:45	3 ft	631897-009
PH05A	S	07-23-19 15:50	4 ft	631897-010
PH06	S	07-23-19 16:15	1 ft	631897-011
PH06A	S	07-23-19 16:35	5 ft	631897-012



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 25 Obs Well #1

Project ID:
Work Order Number(s): 631897

Report Date: 29-JUL-19
Date Received: 07/24/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3096644 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 631897-001,631897-003.

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

Batch: LBA-3096781 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 631897-011.

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



Certificate of Analysis Summary 631897

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Wed Jul-24-19 09:20 am

Report Date: 29-JUL-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	631897-001	631897-002	631897-003	631897-004	631897-005	631897-006
	<i>Field Id:</i>	PH01	PH01A	PH02	PH02A	PH03	PH03A
	<i>Depth:</i>	1- ft	6- ft	1- ft	6- ft	1- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jul-23-19 09:50	Jul-23-19 10:15	Jul-23-19 11:30	Jul-23-19 12:20	Jul-23-19 13:40	Jul-23-19 13:55
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Jul-25-19 15:00	Jul-25-19 15:00	Jul-25-19 15:00	Jul-25-19 15:00	Jul-25-19 15:00	Jul-25-19 15:00
	<i>Analyzed:</i>	Jul-26-19 06:58	Jul-26-19 08:17	Jul-26-19 11:18	Jul-26-19 08:37	Jul-26-19 08:57	Jul-26-19 01:40
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00202 0.00202	0.0121 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Toluene		0.0892 0.00200	<0.00202 0.00202	0.106 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Ethylbenzene		0.0811 0.00200	<0.00202 0.00202	0.108 D 0.0400	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
m,p-Xylenes		0.894 D 0.0399	<0.00404 0.00404	2.09 D 0.0800	<0.00399 0.00399	<0.00404 0.00404	<0.00400 0.00400
o-Xylene		0.303 D 0.0200	<0.00202 0.00202	0.693 D 0.0400	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Total Xylenes		1.20 0.0200	<0.00202 0.00202	2.78 0.0400	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Total BTEX		1.37 0.00200	<0.00202 0.00202	3.01 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Jul-25-19 16:15	Jul-25-19 16:15	Jul-25-19 16:15	Jul-25-19 16:15	Jul-25-19 16:15	Jul-25-19 16:15
	<i>Analyzed:</i>	Jul-25-19 23:39	Jul-25-19 23:58	Jul-26-19 00:05	Jul-26-19 00:11	Jul-26-19 00:17	Jul-26-19 00:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		2870 25.1	189 25.1	112 4.96	167 50.0	19.4 5.03	23.9 4.96
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Jul-25-19 16:00	Jul-25-19 16:00	Jul-25-19 16:00	Jul-25-19 16:00	Jul-25-19 16:00	Jul-25-19 16:00
	<i>Analyzed:</i>	Jul-26-19 00:27	Jul-26-19 01:39	Jul-26-19 02:03	Jul-26-19 02:27	Jul-26-19 02:51	Jul-26-19 03:15
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		254 15.0	<14.9 14.9	840 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		1280 15.0	<14.9 14.9	4840 15.0	33.0 15.0	164 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		76.9 15.0	<14.9 14.9	250 15.0	36.0 15.0	16.2 15.0	<15.0 15.0
Total TPH		1610 15.0	<14.9 14.9	5930 15.0	69.0 15.0	180 15.0	<15.0 15.0
Total GRO-DRO		1530 15.0	<14.9 14.9	5680 15.0	33.0 15.0	164 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 631897

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Wed Jul-24-19 09:20 am

Report Date: 29-JUL-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	631897-007	631897-008	631897-009	631897-010	631897-011	631897-012
	<i>Field Id:</i>	PH04	PH04A	PH05	PH05A	PH06	PH06A
	<i>Depth:</i>	3- ft	4- ft	3- ft	4- ft	1- ft	5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jul-23-19 14:30	Jul-23-19 14:35	Jul-23-19 15:45	Jul-23-19 15:50	Jul-23-19 16:15	Jul-23-19 16:35
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Jul-26-19 10:30	Jul-26-19 10:30	Jul-26-19 10:30	Jul-26-19 10:30	Jul-26-19 10:30	Jul-26-19 10:30
	<i>Analyzed:</i>	Jul-27-19 15:29	Jul-27-19 15:49	Jul-27-19 16:09	Jul-27-19 16:29	Jul-27-19 16:49	Jul-27-19 17:09
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Toluene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Ethylbenzene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
m,p-Xylenes		<0.00403 0.00403	<0.00398 0.00398	<0.00402 0.00402	<0.00401 0.00401	0.0646 0.00403	<0.00399 0.00399
o-Xylene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Total Xylenes		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	0.0646 0.00202	<0.00200 0.00200
Total BTEX		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	0.0646 0.00202	<0.00200 0.00200
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Jul-25-19 16:15	Jul-25-19 16:15	Jul-25-19 16:30	Jul-25-19 16:30	Jul-25-19 16:30	Jul-25-19 16:30
	<i>Analyzed:</i>	Jul-26-19 00:30	Jul-26-19 00:36	Jul-26-19 01:33	Jul-26-19 01:14	Jul-26-19 01:39	Jul-26-19 01:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		283 4.99	322 5.03	2150 24.9	359 5.00	33.2 4.97	14.4 4.98
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Jul-25-19 16:00	Jul-25-19 16:00	Jul-25-19 16:00	Jul-25-19 16:00	Jul-25-19 16:00	Jul-25-19 16:00
	<i>Analyzed:</i>	Jul-26-19 03:39	Jul-26-19 04:03	Jul-26-19 04:26	Jul-26-19 04:50	Jul-26-19 05:39	Jul-26-19 06:03
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<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	38.7 15.0	<15.0 15.0	354 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	23.5 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	38.7 15.0	<15.0 15.0	378 15.0	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	38.7 15.0	<15.0 15.0	354 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 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH01** Matrix: Soil Date Received: 07.24.19 09.20
 Lab Sample Id: 631897-001 Date Collected: 07.23.19 09.50 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 07.25.19 16.15 Basis: Wet Weight
 Seq Number: 3096552 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2870	25.1	mg/kg	07.25.19 23.39		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.25.19 16.00 Basis: Wet Weight
 Seq Number: 3096594 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	254	15.0	mg/kg	07.26.19 00.27		1
Diesel Range Organics (DRO)	C10C28DRO	1280	15.0	mg/kg	07.26.19 00.27		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	76.9	15.0	mg/kg	07.26.19 00.27		1
Total TPH	PHC635	1610	15.0	mg/kg	07.26.19 00.27		1
Total GRO-DRO	PHC628	1530	15.0	mg/kg	07.26.19 00.27		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-135	07.26.19 00.27	
o-Terphenyl	84-15-1	94	%	70-135	07.26.19 00.27	



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH01**
Lab Sample Id: 631897-001

Matrix: Soil
Date Collected: 07.23.19 09.50

Date Received: 07.24.19 09.20
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3096644

Prep Method: SW5030B

% Moisture:

Date Prep: 07.25.19 15.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.26.19 06.58	U	1
Toluene	108-88-3	0.0892	0.00200	mg/kg	07.26.19 06.58		1
Ethylbenzene	100-41-4	0.0811	0.00200	mg/kg	07.26.19 06.58		1
m,p-Xylenes	179601-23-1	0.894	0.0399	mg/kg	07.26.19 03.22	D	10
o-Xylene	95-47-6	0.303	0.0200	mg/kg	07.26.19 03.22	D	10
Total Xylenes	1330-20-7	1.20	0.0200	mg/kg	07.26.19 03.22		10
Total BTEX		1.37	0.00200	mg/kg	07.26.19 03.22		10
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	07.26.19 06.58		
4-Bromofluorobenzene	460-00-4	483	%	70-130	07.26.19 06.58	**	



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH01A**
Lab Sample Id: 631897-002

Matrix: Soil
Date Collected: 07.23.19 10.15

Date Received: 07.24.19 09.20
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3096552

Date Prep: 07.25.19 16.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	189	25.1	mg/kg	07.25.19 23.58		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096594

Date Prep: 07.25.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.26.19 01.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	07.26.19 01.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	07.26.19 01.39	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	07.26.19 01.39	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	07.26.19 01.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	07.26.19 01.39	
o-Terphenyl	84-15-1	71	%	70-135	07.26.19 01.39	



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH01A**
Lab Sample Id: 631897-002

Matrix: Soil
Date Collected: 07.23.19 10.15

Date Received: 07.24.19 09.20
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3096644

Prep Method: SW5030B

% Moisture:

Date Prep: 07.25.19 15.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	07.26.19 08.17	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	07.26.19 08.17	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	07.26.19 08.17	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	07.26.19 08.17	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	07.26.19 08.17	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	07.26.19 08.17	U	1
Total BTEX		<0.00202	0.00202	mg/kg	07.26.19 08.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	07.26.19 08.17		
4-Bromofluorobenzene	460-00-4	71	%	70-130	07.26.19 08.17		



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH02**
Lab Sample Id: 631897-003

Matrix: Soil
Date Collected: 07.23.19 11.30

Date Received: 07.24.19 09.20
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3096552

Date Prep: 07.25.19 16.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	112	4.96	mg/kg	07.26.19 00.05		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096594

Date Prep: 07.25.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	840	15.0	mg/kg	07.26.19 02.03		1
Diesel Range Organics (DRO)	C10C28DRO	4840	15.0	mg/kg	07.26.19 02.03		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	250	15.0	mg/kg	07.26.19 02.03		1
Total TPH	PHC635	5930	15.0	mg/kg	07.26.19 02.03		1
Total GRO-DRO	PHC628	5680	15.0	mg/kg	07.26.19 02.03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	07.26.19 02.03	
o-Terphenyl	84-15-1	125	%	70-135	07.26.19 02.03	



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH02**
Lab Sample Id: 631897-003

Matrix: Soil
Date Collected: 07.23.19 11.30

Date Received: 07.24.19 09.20
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3096644

Date Prep: 07.25.19 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0121	0.00200	mg/kg	07.26.19 11.18		1
Toluene	108-88-3	0.106	0.00200	mg/kg	07.26.19 11.18		1
Ethylbenzene	100-41-4	0.108	0.0400	mg/kg	07.26.19 04.10	D	20
m,p-Xylenes	179601-23-1	2.09	0.0800	mg/kg	07.26.19 04.10	D	20
o-Xylene	95-47-6	0.693	0.0400	mg/kg	07.26.19 04.10	D	20
Total Xylenes	1330-20-7	2.78	0.0400	mg/kg	07.26.19 04.10		20
Total BTEX		3.01	0.00200	mg/kg	07.26.19 04.10		20
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	2943	%	70-130	07.26.19 11.18	**	
1,4-Difluorobenzene	540-36-3	111	%	70-130	07.26.19 11.18		



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH02A**
Lab Sample Id: 631897-004

Matrix: Soil
Date Collected: 07.23.19 12.20

Date Received: 07.24.19 09.20
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3096552

Date Prep: 07.25.19 16.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	167	50.0	mg/kg	07.26.19 00.11		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096594

Date Prep: 07.25.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.26.19 02.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	33.0	15.0	mg/kg	07.26.19 02.27		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	36.0	15.0	mg/kg	07.26.19 02.27		1
Total TPH	PHC635	69.0	15.0	mg/kg	07.26.19 02.27		1
Total GRO-DRO	PHC628	33.0	15.0	mg/kg	07.26.19 02.27		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	07.26.19 02.27	
o-Terphenyl	84-15-1	85	%	70-135	07.26.19 02.27	



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH02A**
Lab Sample Id: 631897-004

Matrix: Soil
Date Collected: 07.23.19 12.20

Date Received: 07.24.19 09.20
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3096644

Date Prep: 07.25.19 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.26.19 08.37	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.26.19 08.37	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.26.19 08.37	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.26.19 08.37	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.26.19 08.37	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.26.19 08.37	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.26.19 08.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	07.26.19 08.37		
1,4-Difluorobenzene	540-36-3	103	%	70-130	07.26.19 08.37		



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH03**
Lab Sample Id: 631897-005

Matrix: Soil
Date Collected: 07.23.19 13.40

Date Received: 07.24.19 09.20
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3096552

Date Prep: 07.25.19 16.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19.4	5.03	mg/kg	07.26.19 00.17		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096594

Date Prep: 07.25.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.26.19 02.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	164	15.0	mg/kg	07.26.19 02.51		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	16.2	15.0	mg/kg	07.26.19 02.51		1
Total TPH	PHC635	180	15.0	mg/kg	07.26.19 02.51		1
Total GRO-DRO	PHC628	164	15.0	mg/kg	07.26.19 02.51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	07.26.19 02.51	
o-Terphenyl	84-15-1	81	%	70-135	07.26.19 02.51	



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH03**
Lab Sample Id: 631897-005

Matrix: Soil
Date Collected: 07.23.19 13.40

Date Received: 07.24.19 09.20
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3096644

Date Prep: 07.25.19 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	07.26.19 08.57	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	07.26.19 08.57	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	07.26.19 08.57	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	07.26.19 08.57	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	07.26.19 08.57	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	07.26.19 08.57	U	1
Total BTEX		<0.00202	0.00202	mg/kg	07.26.19 08.57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	07.26.19 08.57		
4-Bromofluorobenzene	460-00-4	117	%	70-130	07.26.19 08.57		



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH03A** Matrix: Soil Date Received: 07.24.19 09.20
 Lab Sample Id: 631897-006 Date Collected: 07.23.19 13.55 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 07.25.19 16.15 Basis: Wet Weight
 Seq Number: 3096552 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23.9	4.96	mg/kg	07.26.19 00.24		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.25.19 16.00 Basis: Wet Weight
 Seq Number: 3096594 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.26.19 03.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.26.19 03.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.26.19 03.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.26.19 03.15	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.26.19 03.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	07.26.19 03.15	
o-Terphenyl	84-15-1	85	%	70-135	07.26.19 03.15	



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH03A**
Lab Sample Id: 631897-006

Matrix: Soil
Date Collected: 07.23.19 13.55

Date Received: 07.24.19 09.20
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3096644

Date Prep: 07.25.19 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.26.19 01.40	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.26.19 01.40	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.26.19 01.40	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.26.19 01.40	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.26.19 01.40	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.26.19 01.40	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.26.19 01.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	116	%	70-130	07.26.19 01.40		
1,4-Difluorobenzene	540-36-3	105	%	70-130	07.26.19 01.40		



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH04**
Lab Sample Id: 631897-007

Matrix: Soil
Date Collected: 07.23.19 14.30

Date Received: 07.24.19 09.20
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3096552

Date Prep: 07.25.19 16.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	283	4.99	mg/kg	07.26.19 00.30		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096594

Date Prep: 07.25.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.26.19 03.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.26.19 03.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.26.19 03.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.26.19 03.39	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.26.19 03.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	07.26.19 03.39	
o-Terphenyl	84-15-1	87	%	70-135	07.26.19 03.39	



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH04**
Lab Sample Id: 631897-007

Matrix: Soil
Date Collected: 07.23.19 14.30

Date Received: 07.24.19 09.20
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3096781

Date Prep: 07.26.19 10.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	07.27.19 15.29	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	07.27.19 15.29	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	07.27.19 15.29	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	07.27.19 15.29	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	07.27.19 15.29	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	07.27.19 15.29	U	1
Total BTEX		<0.00202	0.00202	mg/kg	07.27.19 15.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	07.27.19 15.29		
1,4-Difluorobenzene	540-36-3	105	%	70-130	07.27.19 15.29		



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH04A**
Lab Sample Id: 631897-008

Matrix: Soil
Date Collected: 07.23.19 14.35

Date Received: 07.24.19 09.20
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3096552

Date Prep: 07.25.19 16.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	322	5.03	mg/kg	07.26.19 00.36		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096594

Date Prep: 07.25.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.26.19 04.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.26.19 04.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.26.19 04.03	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.26.19 04.03	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.26.19 04.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	07.26.19 04.03	
o-Terphenyl	84-15-1	76	%	70-135	07.26.19 04.03	



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH04A**
Lab Sample Id: 631897-008

Matrix: Soil
Date Collected: 07.23.19 14.35

Date Received: 07.24.19 09.20
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3096781

Date Prep: 07.26.19 10.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.27.19 15.49	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.27.19 15.49	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.27.19 15.49	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.27.19 15.49	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.27.19 15.49	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.27.19 15.49	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.27.19 15.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	07.27.19 15.49		
4-Bromofluorobenzene	460-00-4	104	%	70-130	07.27.19 15.49		



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH05**
Lab Sample Id: 631897-009

Matrix: Soil
Date Collected: 07.23.19 15.45

Date Received: 07.24.19 09.20
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3096555

Date Prep: 07.25.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2150	24.9	mg/kg	07.26.19 01.33		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096594

Date Prep: 07.25.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.26.19 04.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	38.7	15.0	mg/kg	07.26.19 04.26		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.26.19 04.26	U	1
Total TPH	PHC635	38.7	15.0	mg/kg	07.26.19 04.26		1
Total GRO-DRO	PHC628	38.7	15.0	mg/kg	07.26.19 04.26		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	07.26.19 04.26	
o-Terphenyl	84-15-1	89	%	70-135	07.26.19 04.26	



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH05**
Lab Sample Id: 631897-009

Matrix: Soil
Date Collected: 07.23.19 15.45

Date Received: 07.24.19 09.20
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3096781

Prep Method: SW5030B

% Moisture:

Date Prep: 07.26.19 10.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.27.19 16.09	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.27.19 16.09	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.27.19 16.09	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.27.19 16.09	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.27.19 16.09	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.27.19 16.09	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.27.19 16.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	07.27.19 16.09		
1,4-Difluorobenzene	540-36-3	107	%	70-130	07.27.19 16.09		



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH05A**
Lab Sample Id: 631897-010

Matrix: Soil
Date Collected: 07.23.19 15.50

Date Received: 07.24.19 09.20
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3096555

Date Prep: 07.25.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	359	5.00	mg/kg	07.26.19 01.14		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096594

Date Prep: 07.25.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.26.19 04.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.26.19 04.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.26.19 04.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.26.19 04.50	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.26.19 04.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	07.26.19 04.50	
o-Terphenyl	84-15-1	83	%	70-135	07.26.19 04.50	



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH05A**
Lab Sample Id: 631897-010

Matrix: Soil
Date Collected: 07.23.19 15.50

Date Received: 07.24.19 09.20
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3096781

Date Prep: 07.26.19 10.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.27.19 16.29	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.27.19 16.29	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.27.19 16.29	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.27.19 16.29	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.27.19 16.29	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.27.19 16.29	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.27.19 16.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	07.27.19 16.29		
1,4-Difluorobenzene	540-36-3	109	%	70-130	07.27.19 16.29		



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH06** Matrix: Soil Date Received: 07.24.19 09.20
 Lab Sample Id: 631897-011 Date Collected: 07.23.19 16.15 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 07.25.19 16.30 Basis: Wet Weight
 Seq Number: 3096555 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	33.2	4.97	mg/kg	07.26.19 01.39		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 07.25.19 16.00 Basis: Wet Weight
 Seq Number: 3096594 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.26.19 05.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	354	15.0	mg/kg	07.26.19 05.39		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	23.5	15.0	mg/kg	07.26.19 05.39		1
Total TPH	PHC635	378	15.0	mg/kg	07.26.19 05.39		1
Total GRO-DRO	PHC628	354	15.0	mg/kg	07.26.19 05.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	07.26.19 05.39	
o-Terphenyl	84-15-1	106	%	70-135	07.26.19 05.39	



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH06**
Lab Sample Id: 631897-011

Matrix: Soil
Date Collected: 07.23.19 16.15

Date Received: 07.24.19 09.20
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3096781

Date Prep: 07.26.19 10.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	07.27.19 16.49	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	07.27.19 16.49	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	07.27.19 16.49	U	1
m,p-Xylenes	179601-23-1	0.0646	0.00403	mg/kg	07.27.19 16.49		1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	07.27.19 16.49	U	1
Total Xylenes	1330-20-7	0.0646	0.00202	mg/kg	07.27.19 16.49		1
Total BTEX		0.0646	0.00202	mg/kg	07.27.19 16.49		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	196	%	70-130	07.27.19 16.49	**	
1,4-Difluorobenzene	540-36-3	96	%	70-130	07.27.19 16.49		



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH06A**
Lab Sample Id: 631897-012

Matrix: Soil
Date Collected: 07.23.19 16.35

Date Received: 07.24.19 09.20
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3096555

Date Prep: 07.25.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.4	4.98	mg/kg	07.26.19 01.46		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3096594

Date Prep: 07.25.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.26.19 06.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.26.19 06.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.26.19 06.03	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.26.19 06.03	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.26.19 06.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	07.26.19 06.03	
o-Terphenyl	84-15-1	84	%	70-135	07.26.19 06.03	



Certificate of Analytical Results 631897

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH06A**
Lab Sample Id: 631897-012

Matrix: Soil
Date Collected: 07.23.19 16.35

Date Received: 07.24.19 09.20
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALG

Analyst: FOV

Seq Number: 3096781

Date Prep: 07.26.19 10.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.27.19 17.09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.27.19 17.09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.27.19 17.09	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.27.19 17.09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.27.19 17.09	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.27.19 17.09	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.27.19 17.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	07.27.19 17.09		
4-Bromofluorobenzene	460-00-4	112	%	70-130	07.27.19 17.09		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 Obs Well #1

Analytical Method: Chloride by EPA 300

Seq Number: 3096552

MB Sample Id: 7682868-1-BLK

Matrix: Solid

LCS Sample Id: 7682868-1-BKS

Prep Method: E300P

Date Prep: 07.25.19

LCSD Sample Id: 7682868-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	253	101	253	101	90-110	0	20	mg/kg	07.25.19 21:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3096552

MB Sample Id: 7682869-1-BLK

Matrix: Solid

LCS Sample Id: 7682869-1-BKS

Prep Method: E300P

Date Prep: 07.25.19

LCSD Sample Id: 7682869-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	244	98	243	97	90-110	0	20	mg/kg	07.26.19 01:02	

Analytical Method: Chloride by EPA 300

Seq Number: 3096552

Parent Sample Id: 631827-010

Matrix: Soil

MS Sample Id: 631827-010 S

Prep Method: E300P

Date Prep: 07.25.19

MSD Sample Id: 631827-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	268	251	514	98	516	99	90-110	0	20	mg/kg	07.25.19 21:52	

Analytical Method: Chloride by EPA 300

Seq Number: 3096552

Parent Sample Id: 632029-004

Matrix: Soil

MS Sample Id: 632029-004 S

Prep Method: E300P

Date Prep: 07.25.19

MSD Sample Id: 632029-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	24.4	249	278	102	278	102	90-110	0	20	mg/kg	07.25.19 23:20	

Analytical Method: Chloride by EPA 300

Seq Number: 3096555

Parent Sample Id: 631897-010

Matrix: Soil

MS Sample Id: 631897-010 S

Prep Method: E300P

Date Prep: 07.25.19

MSD Sample Id: 631897-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	359	250	603	98	604	98	90-110	0	20	mg/kg	07.26.19 01:20	

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

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

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

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



LT Environmental, Inc.

Remuda 25 Obs Well #1

Analytical Method: Chloride by EPA 300

Seq Number: 3096555

Parent Sample Id: 631904-007

Matrix: Soil

MS Sample Id: 631904-007 S

Prep Method: E300P

Date Prep: 07.25.19

MSD Sample Id: 631904-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1.31	252	249	98	250	99	90-110	0	20	mg/kg	07.26.19 02:49	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3096594

MB Sample Id: 7682826-1-BLK

Matrix: Solid

LCS Sample Id: 7682826-1-BKS

Prep Method: TX1005P

Date Prep: 07.25.19

LCSD Sample Id: 7682826-1-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	890	89	856	86	70-135	4	20	mg/kg	07.25.19 23:39	
Diesel Range Organics (DRO)	<8.13	1000	1060	106	1000	100	70-135	6	20	mg/kg	07.25.19 23:39	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	82		82		82		70-135	%	07.25.19 23:39
o-Terphenyl	87		95		98		70-135	%	07.25.19 23:39

Analytical Method: TPH by SW8015 Mod

Seq Number: 3096594

Parent Sample Id: 631897-001

Matrix: Soil

MS Sample Id: 631897-001 S

Prep Method: TX1005P

Date Prep: 07.25.19

MSD Sample Id: 631897-001 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)	254	998	1120	87	1060	81	70-135	6	20	mg/kg	07.26.19 00:51	
Diesel Range Organics (DRO)	1280	998	2040	76	2060	78	70-135	1	20	mg/kg	07.26.19 00:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	83		76		70-135	%	07.26.19 00:51
o-Terphenyl	94		89		70-135	%	07.26.19 00:51

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.

Remuda 25 Obs Well #1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3096644

MB Sample Id: 7682807-1-BLK

Matrix: Solid

LCS Sample Id: 7682807-1-BKS

Prep Method: SW5030B

Date Prep: 07.25.19

LCSD Sample Id: 7682807-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.101	101	0.108	108	70-130	7	35	mg/kg	07.26.19 01:57	
Toluene	<0.00200	0.100	0.0979	98	0.105	105	70-130	7	35	mg/kg	07.26.19 01:57	
Ethylbenzene	<0.00200	0.100	0.113	113	0.118	118	70-130	4	35	mg/kg	07.26.19 01:57	
m,p-Xylenes	<0.00400	0.200	0.232	116	0.243	122	70-130	5	35	mg/kg	07.26.19 01:57	
o-Xylene	<0.00200	0.100	0.110	110	0.119	119	70-130	8	35	mg/kg	07.26.19 01:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		99		104		70-130	%	07.26.19 01:57
4-Bromofluorobenzene	95		109		123		70-130	%	07.26.19 01:57

Analytical Method: BTEX by EPA 8021B

Seq Number: 3096781

MB Sample Id: 7682919-1-BLK

Matrix: Solid

LCS Sample Id: 7682919-1-BKS

Prep Method: SW5030B

Date Prep: 07.26.19

LCSD Sample Id: 7682919-1-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	0.0945	95	0.104	104	70-130	10	35	mg/kg	07.27.19 09:09	
Toluene	<0.000456	0.100	0.0890	89	0.0946	95	70-130	6	35	mg/kg	07.27.19 09:09	
Ethylbenzene	<0.000565	0.100	0.0892	89	0.0931	93	70-130	4	35	mg/kg	07.27.19 09:09	
m,p-Xylenes	<0.00101	0.200	0.180	90	0.186	93	70-130	3	35	mg/kg	07.27.19 09:09	
o-Xylene	<0.000344	0.100	0.0943	94	0.0974	97	70-130	3	35	mg/kg	07.27.19 09:09	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		99		101		70-130	%	07.27.19 09:09
4-Bromofluorobenzene	101		106		102		70-130	%	07.27.19 09:09

Analytical Method: BTEX by EPA 8021B

Seq Number: 3096644

Parent Sample Id: 632028-002

Matrix: Soil

MS Sample Id: 632028-002 S

Prep Method: SW5030B

Date Prep: 07.25.19

MSD Sample Id: 632028-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0969	96	0.0977	97	70-130	1	35	mg/kg	07.26.19 02:37	
Toluene	<0.00202	0.101	0.0929	92	0.0936	93	70-130	1	35	mg/kg	07.26.19 02:37	
Ethylbenzene	<0.00202	0.101	0.100	99	0.102	101	70-130	2	35	mg/kg	07.26.19 02:37	
m,p-Xylenes	<0.00404	0.202	0.205	101	0.209	103	70-130	2	35	mg/kg	07.26.19 02:37	
o-Xylene	<0.00202	0.101	0.0999	99	0.103	102	70-130	3	35	mg/kg	07.26.19 02:37	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		101		70-130	%	07.26.19 02:37
4-Bromofluorobenzene	116		122		70-130	%	07.26.19 02:37

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.

Remuda 25 Obs Well #1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3096781

Parent Sample Id: 631660-041

Matrix: Soil

MS Sample Id: 631660-041 S

Prep Method: SW5030B

Date Prep: 07.26.19

MSD Sample Id: 631660-041 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0795	80	0.0761	76	70-130	4	35	mg/kg	07.27.19 09:50	
Toluene	<0.00200	0.100	0.0704	70	0.0697	70	70-130	1	35	mg/kg	07.27.19 09:50	
Ethylbenzene	<0.00200	0.100	0.0709	71	0.0705	71	70-130	1	35	mg/kg	07.27.19 09:50	
m,p-Xylenes	<0.00101	0.200	0.140	70	0.141	71	70-130	1	35	mg/kg	07.27.19 09:50	
o-Xylene	<0.00200	0.100	0.0728	73	0.0737	74	70-130	1	35	mg/kg	07.27.19 09:50	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		103		70-130	%	07.27.19 09:50
4-Bromofluorobenzene	103		109		70-130	%	07.27.19 09:50

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: 1031897

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) 555-3443 Lubbock, TX (806) 794-1296
 Hobbs, NM (575-392-7650) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 620-2000

www.xencolab.com

Page 1 of 2

Project Manager:	Dan Mair	Bill to: (if different)	Kyle Litrel
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:	dmair@lienv.com mclitrel@xtoenv.com

Program: UST/PT	☐ PRP	☐ Brownfields	☐ RC	☐ Superfund
State of Project:				
Reporting Level II	☐ Level III	☐ ST/UST	☐ RRP	☐ Level IV
Deliverables: EDO	☐ ADAPT	☐ Other:		

Project Name:	Round 25 Obs well #1	Turn Around	
Project Number:		Routine	☐
P.O. Number:		Rush:	3 day
Sampler's Name:	Robert McVee	Date Date:	

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	1.4	Thermometer ID					
Received intact:	Yes	Correction Factor:	-0.2				
Cooler Custody Seals:	Yes	Total Containers:	10				
Sample Custody Seals:	Yes						

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST											Work Order Notes		
					Number of Containers	TPH (EPA 8015)	BTEX (EPA 8-8021)	Chloride (EPA 300.0)										
PH01	S	07/21/19	0350	1'	1	X	X	X										
PH01A			0315	6'		X	X	X										
PH02			1130	1'		X	X	X										
PH02A			1220	6'		X	X	X										
PH03			1340	1'		X	X	X										
PH03A			1355	4'		X	X	X										
PH04			1430	3'		X	X	X										
PH04A			1455	4'		X	X	X										
PH05			1545	3'		X	X	X										
PH05A			1550	4'		X	X	X										

Total 200.7 / 6010 200.8 / 6020: BRCRA 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. BRCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471. Hg

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 McVee</i>	<i>Don Co</i>	7/24/19 9:02	<i>Don Co</i>	<i>Don Co</i>	7/24/19 9:20

Work Order No: 1031897

Page 1 of 1

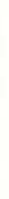
Work Order Comments	
Program: UST/PST	☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:	
Reporting Level II	☐ Level III ☐ PSTR/UST ☐ NRP ☐ Level IV ☐
Deliverables: EDO	☐ ADAPT ☐ Other:

[illegible]

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E)	BTEX (E)	Chloride	Sample Comments
PHOC	S	07/23/19	11:15	1'	1	X	X	X	direct
PHOC	S	07/23/19	16:35	5'	1	X	X	X	discrete

any agreement or document, the signatories of samples (consumers or their purchase order from their company) to Xetco, the initial and subsequent, it assigns standard terms and conditions of service. Xetco 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 Xetco. A minimum charge of \$15.00 will be applied to each project and a charge of \$5 for each sample submitted to Xetco, but not analysed. These terms will be entered unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		7-24-19 9:00			7/24/19 9:20



Inter-Office Shipment

Page 1 of 2

IOS Number **44864**

Date/Time: 07/24/19 11:05

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 775826350686

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
631897-001	S	PH01	07/23/19 09:50	SW8021B	BTEX by EPA 8021B	07/26/19	08/06/19	JKR	BR4FBZ BZ BZME EBZ X	
631897-001	S	PH01	07/23/19 09:50	E300_CL	Chloride by EPA 300	07/26/19	01/19/20	JKR	CL	
631897-001	S	PH01	07/23/19 09:50	SW8015MOD_NM	TPH by SW8015 Mod	07/26/19	08/06/19	JKR	GRO-DRO PHCC10C28 PF	
631897-002	S	PH01A	07/23/19 10:15	SW8015MOD_NM	TPH by SW8015 Mod	07/26/19	08/06/19	JKR	GRO-DRO PHCC10C28 PF	
631897-002	S	PH01A	07/23/19 10:15	SW8021B	BTEX by EPA 8021B	07/26/19	08/06/19	JKR	BR4FBZ BZ BZME EBZ X	
631897-002	S	PH01A	07/23/19 10:15	E300_CL	Chloride by EPA 300	07/26/19	01/19/20	JKR	CL	
631897-003	S	PH02	07/23/19 11:30	SW8021B	BTEX by EPA 8021B	07/26/19	08/06/19	JKR	BR4FBZ BZ BZME EBZ X	
631897-003	S	PH02	07/23/19 11:30	SW8015MOD_NM	TPH by SW8015 Mod	07/26/19	08/06/19	JKR	GRO-DRO PHCC10C28 PF	
631897-003	S	PH02	07/23/19 11:30	E300_CL	Chloride by EPA 300	07/26/19	01/19/20	JKR	CL	
631897-004	S	PH02A	07/23/19 12:20	SW8021B	BTEX by EPA 8021B	07/26/19	08/06/19	JKR	BR4FBZ BZ BZME EBZ X	
631897-004	S	PH02A	07/23/19 12:20	SW8015MOD_NM	TPH by SW8015 Mod	07/26/19	08/06/19	JKR	GRO-DRO PHCC10C28 PF	
631897-004	S	PH02A	07/23/19 12:20	E300_CL	Chloride by EPA 300	07/26/19	01/19/20	JKR	CL	
631897-005	S	PH03	07/23/19 13:40	SW8021B	BTEX by EPA 8021B	07/26/19	08/06/19	JKR	BR4FBZ BZ BZME EBZ X	
631897-005	S	PH03	07/23/19 13:40	SW8015MOD_NM	TPH by SW8015 Mod	07/26/19	08/06/19	JKR	GRO-DRO PHCC10C28 PF	
631897-005	S	PH03	07/23/19 13:40	E300_CL	Chloride by EPA 300	07/26/19	01/19/20	JKR	CL	
631897-006	S	PH03A	07/23/19 13:55	SW8021B	BTEX by EPA 8021B	07/26/19	08/06/19	JKR	BR4FBZ BZ BZME EBZ X	
631897-006	S	PH03A	07/23/19 13:55	SW8015MOD_NM	TPH by SW8015 Mod	07/26/19	08/06/19	JKR	GRO-DRO PHCC10C28 PF	
631897-006	S	PH03A	07/23/19 13:55	E300_CL	Chloride by EPA 300	07/26/19	01/19/20	JKR	CL	
631897-007	S	PH04	07/23/19 14:30	E300_CL	Chloride by EPA 300	07/26/19	01/19/20	JKR	CL	
631897-007	S	PH04	07/23/19 14:30	SW8021B	BTEX by EPA 8021B	07/26/19	08/06/19	JKR	BR4FBZ BZ BZME EBZ X	
631897-007	S	PH04	07/23/19 14:30	SW8015MOD_NM	TPH by SW8015 Mod	07/26/19	08/06/19	JKR	GRO-DRO PHCC10C28 PF	
631897-008	S	PH04A	07/23/19 14:35	SW8015MOD_NM	TPH by SW8015 Mod	07/26/19	08/06/19	JKR	GRO-DRO PHCC10C28 PF	
631897-008	S	PH04A	07/23/19 14:35	SW8021B	BTEX by EPA 8021B	07/26/19	08/06/19	JKR	BR4FBZ BZ BZME EBZ X	
631897-008	S	PH04A	07/23/19 14:35	E300_CL	Chloride by EPA 300	07/26/19	01/19/20	JKR	CL	
631897-009	S	PH05	07/23/19 15:45	SW8015MOD_NM	TPH by SW8015 Mod	07/26/19	08/06/19	JKR	GRO-DRO PHCC10C28 PF	



Inter-Office Shipment

Page 2 of 2

IOS Number **44864**

Date/Time: 07/24/19 11:05

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 775826350686

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
631897-009	S	PH05	07/23/19 15:45	SW8021B	BTEX by EPA 8021B	07/26/19	08/06/19	JKR	BR4FBZ BZ BZME EBZ X	
631897-009	S	PH05	07/23/19 15:45	E300_CL	Chloride by EPA 300	07/26/19	01/19/20	JKR	CL	
631897-010	S	PH05A	07/23/19 15:50	SW8021B	BTEX by EPA 8021B	07/26/19	08/06/19	JKR	BR4FBZ BZ BZME EBZ X	
631897-010	S	PH05A	07/23/19 15:50	E300_CL	Chloride by EPA 300	07/26/19	01/19/20	JKR	CL	
631897-010	S	PH05A	07/23/19 15:50	SW8015MOD_NM	TPH by SW8015 Mod	07/26/19	08/06/19	JKR	GRO-DRO PHCC10C28 PF	
631897-011	S	PH06	07/23/19 16:15	SW8021B	BTEX by EPA 8021B	07/26/19	08/06/19	JKR	BR4FBZ BZ BZME EBZ X	
631897-011	S	PH06	07/23/19 16:15	E300_CL	Chloride by EPA 300	07/26/19	01/19/20	JKR	CL	
631897-011	S	PH06	07/23/19 16:15	SW8015MOD_NM	TPH by SW8015 Mod	07/26/19	08/06/19	JKR	GRO-DRO PHCC10C28 PF	
631897-012	S	PH06A	07/23/19 16:35	SW8015MOD_NM	TPH by SW8015 Mod	07/26/19	08/06/19	JKR	GRO-DRO PHCC10C28 PF	
631897-012	S	PH06A	07/23/19 16:35	E300_CL	Chloride by EPA 300	07/26/19	01/19/20	JKR	CL	
631897-012	S	PH06A	07/23/19 16:35	SW8021B	BTEX by EPA 8021B	07/26/19	08/06/19	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Relinquished By:

Elizabeth McClellan

Date Relinquished: 07/24/2019

Received By:

Brianna Teel

Date Received: 07/25/2019 11:31

Cooler Temperature: 0.4



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 44864

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 07/24/2019 11:05 AM

Received By: Brianna Teel

Date Received: 07/25/2019 11:31 AM

Sample Receipt Checklist

Comments

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: 07/25/2019



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 07/24/2019 09:20:00 AM

Work Order #: 631897

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-07

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes
#18 Water VOC samples have zero headspace?	N/A

Subbed to Xenco Midland.

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 07/24/2019

Checklist reviewed by:

Jessica Kramer

Date: 07/29/2019

Analytical Report 632560

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda 25 Obs Well#1

2RP-5309

07-AUG-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

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

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



07-AUG-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **632560**

Remuda 25 Obs Well#1

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 632560. 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. 632560 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

**Sample Cross Reference 632560****LT Environmental, Inc., Arvada, CO**

Remuda 25 Obs Well#1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	07-30-19 11:20	5.5 ft	632560-001
FS02	S	07-30-19 11:30	3 ft	632560-002
FS03	S	07-30-19 11:40	3 ft	632560-003
FS04	S	07-30-19 13:50	3 ft	632560-004
FS05	S	07-30-19 13:55	2 ft	632560-005
FS06	S	07-30-19 14:00	2 ft	632560-006



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 25 Obs Well#1

Project ID: 2RP-5309
Work Order Number(s): 632560

Report Date: 07-AUG-19
Date Received: 07/30/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3097307 Chloride by EPA 300

Lab Sample ID 632659-026 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 632560-001, -002, -003, -004, -005, -006.

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

Batch: LBA-3097523 BTEX by EPA 8021B

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



Certificate of Analysis Summary 632560

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well#1

Project Id: 2RP-5309

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Jul-30-19 04:20 pm

Report Date: 07-AUG-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	632560-001	632560-002	632560-003	632560-004	632560-005	632560-006
	<i>Field Id:</i>	FS01	FS02	FS03	FS04	FS05	FS06
	<i>Depth:</i>	5.5- ft	3- ft	3- ft	3- ft	2- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jul-30-19 11:20	Jul-30-19 11:30	Jul-30-19 11:40	Jul-30-19 13:50	Jul-30-19 13:55	Jul-30-19 14:00
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Aug-02-19 10:00	Aug-02-19 10:00	Aug-02-19 10:00	Aug-02-19 10:00	Aug-02-19 10:00	Aug-02-19 10:00
	<i>Analyzed:</i>	Aug-02-19 22:41	Aug-04-19 19:10	Aug-02-19 23:21	Aug-02-19 23:41	Aug-03-19 00:01	Aug-03-19 00:21
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	0.0516 0.00198	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00400 0.00400	<0.00400 0.00400	0.00577 0.00398	0.0309 0.00396	<0.00399 0.00399	<0.00401 0.00401
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	0.0107 0.00199	0.00932 0.00198	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	0.0165 0.00199	0.0402 0.00198	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	0.0165 0.00199	0.0918 0.00198	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Aug-01-19 17:00	Aug-01-19 17:00	Aug-01-19 17:00	Aug-01-19 17:00	Aug-01-19 17:00	Aug-01-19 17:00
	<i>Analyzed:</i>	Aug-01-19 22:31	Aug-01-19 22:38	Aug-01-19 22:44	Aug-01-19 22:50	Aug-01-19 22:57	Aug-01-19 23:03
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		812 50.1	2260 50.0	3840 50.1	2480 25.0	1220 5.04	260 5.03
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Aug-02-19 09:00	Aug-02-19 09:00	Aug-02-19 09:00	Aug-05-19 11:00	Aug-02-19 09:00	Aug-02-19 09:00
	<i>Analyzed:</i>	Aug-04-19 16:55	Aug-04-19 17:16	Aug-04-19 17:56	Aug-06-19 19:10	Aug-04-19 18:37	Aug-04-19 18:58
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<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)		88.7 15.0	50.6 15.0	<15.0 15.0	62.7 15.0	<15.0 15.0	<14.9 14.9
Motor Oil Range Hydrocarbons (MRO)		15.3 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total TPH		104 15.0	50.6 15.0	<15.0 15.0	62.7 15.0	<15.0 15.0	<14.9 14.9
Total GRO-DRO		88.7 15.0	50.6 15.0	<15.0 15.0	62.7 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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 632560

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS01** Matrix: Soil Date Received: 07.30.19 16.20
 Lab Sample Id: 632560-001 Date Collected: 07.30.19 11.20 Sample Depth: 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 08.01.19 17.00 Basis: Wet Weight
 Seq Number: 3097307 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	812	50.1	mg/kg	08.01.19 22.31		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.02.19 09.00 Basis: Wet Weight
 Seq Number: 3097503 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.04.19 16.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	88.7	15.0	mg/kg	08.04.19 16.55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	15.3	15.0	mg/kg	08.04.19 16.55		1
Total TPH	PHC635	104	15.0	mg/kg	08.04.19 16.55		1
Total GRO-DRO	PHC628	88.7	15.0	mg/kg	08.04.19 16.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	08.04.19 16.55	
o-Terphenyl	84-15-1	97	%	70-135	08.04.19 16.55	



Certificate of Analytical Results 632560

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS01**
Lab Sample Id: 632560-001

Matrix: Soil
Date Collected: 07.30.19 11.20

Date Received: 07.30.19 16.20
Sample Depth: 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097523

Prep Method: SW5030B

% Moisture:

Date Prep: 08.02.19 10.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.02.19 22.41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.02.19 22.41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.02.19 22.41	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.02.19 22.41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.02.19 22.41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.02.19 22.41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.02.19 22.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	08.02.19 22.41		
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.02.19 22.41		



Certificate of Analytical Results 632560

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS02** Matrix: Soil Date Received: 07.30.19 16.20
 Lab Sample Id: 632560-002 Date Collected: 07.30.19 11.30 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 08.01.19 17.00 Basis: Wet Weight
 Seq Number: 3097307 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2260	50.0	mg/kg	08.01.19 22.38		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.02.19 09.00 Basis: Wet Weight
 Seq Number: 3097503 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.04.19 17.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	50.6	15.0	mg/kg	08.04.19 17.16		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.04.19 17.16	U	1
Total TPH	PHC635	50.6	15.0	mg/kg	08.04.19 17.16		1
Total GRO-DRO	PHC628	50.6	15.0	mg/kg	08.04.19 17.16		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	08.04.19 17.16	
o-Terphenyl	84-15-1	99	%	70-135	08.04.19 17.16	



Certificate of Analytical Results 632560

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS02**
Lab Sample Id: 632560-002

Matrix: Soil
Date Collected: 07.30.19 11.30

Date Received: 07.30.19 16.20
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097523

Prep Method: SW5030B

% Moisture:

Date Prep: 08.02.19 10.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.04.19 19.10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.04.19 19.10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.04.19 19.10	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.04.19 19.10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.04.19 19.10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.04.19 19.10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.04.19 19.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	08.04.19 19.10		
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.04.19 19.10		



Certificate of Analytical Results 632560

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS03**
Lab Sample Id: 632560-003

Matrix: Soil
Date Collected: 07.30.19 11.40

Date Received: 07.30.19 16.20
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3097307

Date Prep: 08.01.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3840	50.1	mg/kg	08.01.19 22.44		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097503

Date Prep: 08.02.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.04.19 17.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.04.19 17.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.04.19 17.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.04.19 17.56	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.04.19 17.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.04.19 17.56	
o-Terphenyl	84-15-1	91	%	70-135	08.04.19 17.56	



Certificate of Analytical Results 632560

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS03**
Lab Sample Id: 632560-003

Matrix: Soil
Date Collected: 07.30.19 11.40

Date Received: 07.30.19 16.20
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097523

Prep Method: SW5030B

% Moisture:

Date Prep: 08.02.19 10.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.02.19 23.21	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.02.19 23.21	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.02.19 23.21	U	1
m,p-Xylenes	179601-23-1	0.00577	0.00398	mg/kg	08.02.19 23.21		1
o-Xylene	95-47-6	0.0107	0.00199	mg/kg	08.02.19 23.21		1
Total Xylenes	1330-20-7	0.0165	0.00199	mg/kg	08.02.19 23.21		1
Total BTEX		0.0165	0.00199	mg/kg	08.02.19 23.21		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	08.02.19 23.21		
4-Bromofluorobenzene	460-00-4	117	%	70-130	08.02.19 23.21		



Certificate of Analytical Results 632560

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS04**
Lab Sample Id: 632560-004

Matrix: Soil
Date Collected: 07.30.19 13.50

Date Received: 07.30.19 16.20
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3097307

Date Prep: 08.01.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2480	25.0	mg/kg	08.01.19 22.50		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097737

Date Prep: 08.05.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.06.19 19.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	62.7	15.0	mg/kg	08.06.19 19.10		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.06.19 19.10	U	1
Total TPH	PHC635	62.7	15.0	mg/kg	08.06.19 19.10		1
Total GRO-DRO	PHC628	62.7	15.0	mg/kg	08.06.19 19.10		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	08.06.19 19.10	
o-Terphenyl	84-15-1	78	%	70-135	08.06.19 19.10	



Certificate of Analytical Results 632560

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS04**
Lab Sample Id: 632560-004

Matrix: Soil
Date Collected: 07.30.19 13.50

Date Received: 07.30.19 16.20
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097523

Prep Method: SW5030B

% Moisture:

Date Prep: 08.02.19 10.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.02.19 23.41	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.02.19 23.41	U	1
Ethylbenzene	100-41-4	0.0516	0.00198	mg/kg	08.02.19 23.41		1
m,p-Xylenes	179601-23-1	0.0309	0.00396	mg/kg	08.02.19 23.41		1
o-Xylene	95-47-6	0.00932	0.00198	mg/kg	08.02.19 23.41		1
Total Xylenes	1330-20-7	0.0402	0.00198	mg/kg	08.02.19 23.41		1
Total BTEX		0.0918	0.00198	mg/kg	08.02.19 23.41		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98		%	70-130	08.02.19 23.41	
4-Bromofluorobenzene	460-00-4	119		%	70-130	08.02.19 23.41	



Certificate of Analytical Results 632560

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS05**
Lab Sample Id: 632560-005

Matrix: Soil
Date Collected: 07.30.19 13.55

Date Received: 07.30.19 16.20
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3097307

Date Prep: 08.01.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1220	5.04	mg/kg	08.01.19 22.57		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097503

Date Prep: 08.02.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.04.19 18.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.04.19 18.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.04.19 18.37	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.04.19 18.37	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.04.19 18.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	08.04.19 18.37	
o-Terphenyl	84-15-1	92	%	70-135	08.04.19 18.37	



Certificate of Analytical Results 632560

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS05**
Lab Sample Id: 632560-005

Matrix: Soil
Date Collected: 07.30.19 13.55

Date Received: 07.30.19 16.20
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097523

Prep Method: SW5030B

% Moisture:

Date Prep: 08.02.19 10.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.03.19 00.01	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.03.19 00.01	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.03.19 00.01	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.03.19 00.01	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.03.19 00.01	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.03.19 00.01	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.03.19 00.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	08.03.19 00.01		
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.03.19 00.01		



Certificate of Analytical Results 632560

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS06** Matrix: Soil Date Received: 07.30.19 16.20
 Lab Sample Id: 632560-006 Date Collected: 07.30.19 14.00 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 08.01.19 17.00 Basis: Wet Weight
 Seq Number: 3097307 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	260	5.03	mg/kg	08.01.19 23.03		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.02.19 09.00 Basis: Wet Weight
 Seq Number: 3097503 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.04.19 18.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	08.04.19 18.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	08.04.19 18.58	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	08.04.19 18.58	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	08.04.19 18.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	08.04.19 18.58	
o-Terphenyl	84-15-1	89	%	70-135	08.04.19 18.58	



Certificate of Analytical Results 632560

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS06**
Lab Sample Id: 632560-006

Matrix: Soil
Date Collected: 07.30.19 14.00

Date Received: 07.30.19 16.20
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097523

Prep Method: SW5030B

% Moisture:

Date Prep: 08.02.19 10.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.03.19 00.21	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.03.19 00.21	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.03.19 00.21	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.03.19 00.21	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.03.19 00.21	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.03.19 00.21	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.03.19 00.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	08.03.19 00.21		
1,4-Difluorobenzene	540-36-3	108	%	70-130	08.03.19 00.21		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 Obs Well#1

Analytical Method: Chloride by EPA 300

Seq Number: 3097307

MB Sample Id: 7683354-1-BLK

Matrix: Solid

LCS Sample Id: 7683354-1-BKS

Prep Method: E300P

Date Prep: 08.01.19

LCSD Sample Id: 7683354-1-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	267	107	266	106	90-110	0	20	mg/kg	08.01.19 21:22	

Analytical Method: Chloride by EPA 300

Seq Number: 3097307

Parent Sample Id: 632560-006

Matrix: Soil

MS Sample Id: 632560-006 S

Prep Method: E300P

Date Prep: 08.01.19

MSD Sample Id: 632560-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	260	252	542	112	543	112	90-110	0	20	mg/kg	08.01.19 23:09	X

Analytical Method: Chloride by EPA 300

Seq Number: 3097307

Parent Sample Id: 632659-026

Matrix: Soil

MS Sample Id: 632659-026 S

Prep Method: E300P

Date Prep: 08.01.19

MSD Sample Id: 632659-026 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	36.7	249	311	110	313	111	90-110	1	20	mg/kg	08.01.19 21:41	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3097503

MB Sample Id: 7683384-1-BLK

Matrix: Solid

LCS Sample Id: 7683384-1-BKS

Prep Method: TX1005P

Date Prep: 08.02.19

LCSD Sample Id: 7683384-1-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	1060	106	70-135	5	20	mg/kg	08.04.19 12:55	
Diesel Range Organics (DRO)	<8.13	1000	951	95	998	100	70-135	5	20	mg/kg	08.04.19 12:55	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	88		110		123		70-135	%	08.04.19 12:55
o-Terphenyl	89		96		105		70-135	%	08.04.19 12:55

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

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

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

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



LT Environmental, Inc.

Remuda 25 Obs Well#1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3097737

MB Sample Id: 7683534-1-BLK

Matrix: Solid

LCS Sample Id: 7683534-1-BKS

Prep Method: TX1005P

Date Prep: 08.05.19

LCSD Sample Id: 7683534-1-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	1080	108	1130	113	70-135	5	20	mg/kg	08.06.19 09:26	
Diesel Range Organics (DRO)	<8.13	1000	1150	115	1200	120	70-135	4	20	mg/kg	08.06.19 09:26	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	91		92		99		70-135	%	08.06.19 09:26			
o-Terphenyl	76		94		104		70-135	%	08.06.19 09:26			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3097503

Parent Sample Id: 632659-001

Matrix: Soil

MS Sample Id: 632659-001 S

Prep Method: TX1005P

Date Prep: 08.02.19

MSD Sample Id: 632659-001 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)	<7.98	997	984	99	994	100	70-135	1	20	mg/kg	08.04.19 13:54	
Diesel Range Organics (DRO)	<8.10	997	919	92	939	94	70-135	2	20	mg/kg	08.04.19 13:54	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			124		116		70-135	%	08.04.19 13:54			
o-Terphenyl			100		99		70-135	%	08.04.19 13:54			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3097737

Parent Sample Id: 632815-001

Matrix: Soil

MS Sample Id: 632815-001 S

Prep Method: TX1005P

Date Prep: 08.05.19

MSD Sample Id: 632815-001 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)	20.5	997	1050	103	1020	100	70-135	3	20	mg/kg	08.06.19 10:35	
Diesel Range Organics (DRO)	591	997	1520	93	1540	95	70-135	1	20	mg/kg	08.06.19 10:35	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			93		91		70-135	%	08.06.19 10:35			
o-Terphenyl			84		81		70-135	%	08.06.19 10:35			

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

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

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

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



LT Environmental, Inc.

Remuda 25 Obs Well#1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3097523

MB Sample Id: 7683378-1-BLK

Matrix: Solid

LCS Sample Id: 7683378-1-BKS

Prep Method: SW5030B

Date Prep: 08.02.19

LCSD Sample Id: 7683378-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.104	104	0.115	115	70-130	10	35	mg/kg	08.02.19 20:21	
Toluene	<0.00200	0.100	0.0950	95	0.106	106	70-130	11	35	mg/kg	08.02.19 20:21	
Ethylbenzene	<0.00200	0.100	0.0953	95	0.106	106	70-130	11	35	mg/kg	08.02.19 20:21	
m,p-Xylenes	<0.00101	0.200	0.190	95	0.213	107	70-130	11	35	mg/kg	08.02.19 20:21	
o-Xylene	<0.00200	0.100	0.0974	97	0.109	109	70-130	11	35	mg/kg	08.02.19 20:21	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		100		102		70-130	%	08.02.19 20:21
4-Bromofluorobenzene	104		99		103		70-130	%	08.02.19 20:21

Analytical Method: BTEX by EPA 8021B

Seq Number: 3097523

Parent Sample Id: 632559-001

Matrix: Soil

MD Sample Id: 632559-001 D

Prep Method: SW5030B

Date Prep: 08.02.19

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	<0.00198	0	35	mg/kg	08.02.19 21:22	
Toluene	<0.00198	<0.00198	0	35	mg/kg	08.02.19 21:22	
Ethylbenzene	<0.00198	<0.00198	0	35	mg/kg	08.02.19 21:22	
m,p-Xylenes	<0.00397	<0.00397	0	35	mg/kg	08.02.19 21:22	
o-Xylene	<0.00198	<0.00198	0	35	mg/kg	08.02.19 21:22	
Total Xylenes	0	0	0	20	mg/kg	08.02.19 21:22	
Total BTEX	0	0	0	20	mg/kg	08.02.19 21:22	

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: 16315100

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (214) 509-3334
 Midland, TX (432) 704-5440 El Paso, TX (915) 555-3443 Lubbock, TX (806) 794-1286

www.xenco.com

Page 1 of 1

Project Manager:	Dan Moir	Est. ID: (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:	dmuir@ltenv.com mclittle@xtoenergy.com

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:	Remed 25 Obs Well #1	Turn Around	
Project Number:		Routine	☐
P.O. Number:	2RP-5309	Rush: 4 day	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Well Ice:	Yes ☒ No ☐
	Temperature (°C):	3.6	Thermometer ID	TNMO07
	Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.2
	Cooler Custody Seal:	Yes ☒ No ☐ N/A	Total Containers:	6
	Sample Custody Seal:	Yes ☒ No ☐ N/A		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST	Work Order Notes
F501	S	07/30/19	1120	5.5' AV	1	X	X	X		
F502			1130	3' AV	1	X	X	X		
F503			1140	3' AV	1	X	X	X		
F504			1350	3' AV	1	X	X	X		
F505			1355	2' AV	1	X	X	X		
F506			1400	2' AV	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 SnO2 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 / 17470 / 7474 : Hg

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>[Signature]</i>	<i>[Signature]</i>	7/30/19 16:20			



Inter-Office Shipment

Page 1 of 1

IOS Number **45299**

Date/Time: 07/31/19 10:41

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 7758 8586 0782

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
632560-001	S	FS01	07/30/19 11:20	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/13/19	JKR	GRO-DRO PHCC10C28 PF	
632560-001	S	FS01	07/30/19 11:20	SW8021B	BTEX by EPA 8021B	08/05/19	08/13/19	JKR	BR4FBZ BZ BZME EBZ X	
632560-001	S	FS01	07/30/19 11:20	E300_CL	Chloride by EPA 300	08/05/19	01/26/20	JKR	CL	
632560-002	S	FS02	07/30/19 11:30	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/13/19	JKR	GRO-DRO PHCC10C28 PF	
632560-002	S	FS02	07/30/19 11:30	E300_CL	Chloride by EPA 300	08/05/19	01/26/20	JKR	CL	
632560-002	S	FS02	07/30/19 11:30	SW8021B	BTEX by EPA 8021B	08/05/19	08/13/19	JKR	BR4FBZ BZ BZME EBZ X	
632560-003	S	FS03	07/30/19 11:40	SW8021B	BTEX by EPA 8021B	08/05/19	08/13/19	JKR	BR4FBZ BZ BZME EBZ X	
632560-003	S	FS03	07/30/19 11:40	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/13/19	JKR	GRO-DRO PHCC10C28 PF	
632560-003	S	FS03	07/30/19 11:40	E300_CL	Chloride by EPA 300	08/05/19	01/26/20	JKR	CL	
632560-004	S	FS04	07/30/19 13:50	SW8021B	BTEX by EPA 8021B	08/05/19	08/13/19	JKR	BR4FBZ BZ BZME EBZ X	
632560-004	S	FS04	07/30/19 13:50	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/13/19	JKR	GRO-DRO PHCC10C28 PF	
632560-004	S	FS04	07/30/19 13:50	E300_CL	Chloride by EPA 300	08/05/19	01/26/20	JKR	CL	
632560-005	S	FS05	07/30/19 13:55	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/13/19	JKR	GRO-DRO PHCC10C28 PF	
632560-005	S	FS05	07/30/19 13:55	E300_CL	Chloride by EPA 300	08/05/19	01/26/20	JKR	CL	
632560-005	S	FS05	07/30/19 13:55	SW8021B	BTEX by EPA 8021B	08/05/19	08/13/19	JKR	BR4FBZ BZ BZME EBZ X	
632560-006	S	FS06	07/30/19 14:00	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/13/19	JKR	GRO-DRO PHCC10C28 PF	
632560-006	S	FS06	07/30/19 14:00	E300_CL	Chloride by EPA 300	08/05/19	01/26/20	JKR	CL	
632560-006	S	FS06	07/30/19 14:00	SW8021B	BTEX by EPA 8021B	08/05/19	08/13/19	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Relinquished By:

Elizabeth McClellan

Date Relinquished: 07/31/2019

Received By:

Brianna Teel

Date Received: 08/01/2019 12:10

Cooler Temperature: 0.4



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 45299

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sent By: Elizabeth McClellan

Date Sent: 07/31/2019 10:41 AM

Received By: Brianna Teel

Date Received: 08/01/2019 12:10 PM

Sample Receipt Checklist

Comments

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: 08/01/2019



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 07/30/2019 04:20:00 PM

Work Order #: 632560

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.6	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	No	
#5 Custody Seals intact on sample bottles?	No	
#6 *Custody Seals Signed and dated?	N/A	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	Yes	Subbed to Xenco Midland.
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 07/31/2019

Checklist reviewed by:

Jessica Kramer

Date: 07/31/2019

Analytical Report 632825

**for
LT Environmental, Inc.**

Project Manager: Dan Moir

Remuda 25 Obs Well #1

2RP-5309

08-AUG-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

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

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



08-AUG-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **632825**

Remuda 25 Obs Well #1

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 632825. 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. 632825 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

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 632825****LT Environmental, Inc., Arvada, CO**

Remuda 25 Obs Well #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH07	S	07-31-19 09:30	1 ft	632825-001
PH07A	S	07-31-19 09:45	4 ft	632825-002
PH08	S	07-31-19 10:05	4 ft	632825-003
PH08A	S	07-31-19 10:10	5 ft	632825-004
PH09	S	07-31-19 10:55	1 ft	632825-005
PH09A	S	07-31-19 11:20	5 ft	632825-006
PH09B	S	07-31-19 13:05	10 ft	632825-007
PH10	S	07-31-19 13:45	1 ft	632825-008
PH10A	S	07-31-19 14:05	5 ft	632825-009
PH10B	S	07-31-19 14:20	9 ft	632825-010
PH11	S	07-31-19 15:30	1 ft	632825-011
PH11A	S	07-31-19 15:55	6 ft	632825-012
PH11B	S	07-31-19 16:10	12 ft	632825-013
PH11C	S	07-31-19 16:15	14 ft	632825-014



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 25 Obs Well #1

Project ID: 2RP-5309
Work Order Number(s): 632825

Report Date: 08-AUG-19
Date Received: 08/01/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3097581 TPH by SW8015 Mod

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

Samples affected are: 632825-003,632825-002.

Batch: LBA-3097680 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 632825-005,632825-006,632825-011,632825-010,632825-008.

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



Certificate of Analysis Summary 632825

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id: 2RP-5309

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Aug-01-19 04:05 pm

Report Date: 08-AUG-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	632825-001	632825-002	632825-003	632825-004	632825-005	632825-006
	<i>Field Id:</i>	PH07	PH07A	PH08	PH08A	PH09	PH09A
	<i>Depth:</i>	1- ft	4- ft	4- ft	5- ft	1- ft	5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jul-31-19 09:30	Jul-31-19 09:45	Jul-31-19 10:05	Jul-31-19 10:10	Jul-31-19 10:55	Jul-31-19 11:20
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Aug-03-19 17:30	Aug-03-19 17:30	Aug-03-19 17:30	Aug-03-19 17:30	Aug-03-19 17:30	Aug-03-19 17:30
	<i>Analyzed:</i>	Aug-05-19 01:09	Aug-05-19 01:29	Aug-05-19 01:49	Aug-05-19 02:09	Aug-05-19 02:29	Aug-05-19 02:49
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	0.213 0.200	0.00444 0.00199
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	3.68 0.200	0.0545 0.00199
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	0.420 0.200	0.0158 0.00199
m,p-Xylenes		0.00838 0.00399	<0.00399 0.00399	<0.00399 0.00399	<0.00399 0.00399	18.1 0.400	0.134 0.00398
o-Xylene		0.00269 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	5.52 0.200	0.0504 0.00199
Total Xylenes		0.0111 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	23.6 0.200	0.184 0.00199
Total BTEX		0.0111 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	27.9 0.200	0.259 0.00199
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Aug-05-19 18:00	Aug-07-19 09:00	Aug-05-19 18:00	Aug-05-19 18:00	Aug-05-19 18:00	Aug-05-19 18:00
	<i>Analyzed:</i>	Aug-06-19 02:54	Aug-07-19 11:01	Aug-06-19 03:10	Aug-06-19 03:15	Aug-06-19 03:21	Aug-06-19 03:26
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5.21 5.05	9.42 4.99	10.7 4.96	9.58 4.96	1770 25.1	5400 50.0
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Aug-05-19 10:00	Aug-05-19 10:00	Aug-05-19 10:00	Aug-05-19 10:00	Aug-05-19 10:00	Aug-05-19 10:00
	<i>Analyzed:</i>	Aug-05-19 21:04	Aug-05-19 22:15	Aug-05-19 22:39	Aug-05-19 23:02	Aug-05-19 23:26	Aug-05-19 23:49
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	1350 15.0	22.3 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	51.3 15.0	<15.0 15.0	2630 15.0	87.5 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	122 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	51.3 15.0	<15.0 15.0	4100 15.0	110 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	51.3 15.0	<15.0 15.0	3980 15.0	110 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
Project Assistant



Certificate of Analysis Summary 632825

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id: 2RP-5309

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Aug-01-19 04:05 pm

Report Date: 08-AUG-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	632825-007	632825-008	632825-009	632825-010	632825-011	632825-012
	<i>Field Id:</i>	PH09B	PH10	PH10A	PH10B	PH11	PH11A
	<i>Depth:</i>	10- ft	1- ft	5- ft	9- ft	1- ft	6- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jul-31-19 13:05	Jul-31-19 13:45	Jul-31-19 14:05	Jul-31-19 14:20	Jul-31-19 15:30	Jul-31-19 15:55
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Aug-03-19 17:30	Aug-03-19 17:30	Aug-03-19 17:30	Aug-03-19 17:30	Aug-03-19 17:30	Aug-03-19 17:30
	<i>Analyzed:</i>	Aug-05-19 03:10	Aug-05-19 03:30	Aug-05-19 03:50	Aug-05-19 04:10	Aug-05-19 06:49	Aug-05-19 05:28
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	0.863 0.199	0.00531 0.00200	0.00467 0.00198	<0.200 0.200	0.00333 0.00200
Toluene		0.00210 0.00200	11.1 0.199	0.0313 0.00200	0.0829 0.00198	2.07 0.200	0.0124 0.00200
Ethylbenzene		0.0144 0.00200	3.03 0.199	0.0104 0.00200	0.0193 0.00198	1.02 0.200	0.00244 0.00200
m,p-Xylenes		0.00591 0.00401	36.6 0.398	0.0342 0.00400	0.209 0.00396	7.79 0.401	0.0178 0.00399
o-Xylene		0.0135 0.00200	11.7 0.199	0.0159 0.00200	0.0743 0.00198	2.85 0.200	0.00827 0.00200
Total Xylenes		0.0194 0.00200	48.3 0.199	0.0501 0.00200	0.283 0.00198	10.6 0.200	0.0261 0.00200
Total BTEX		0.0359 0.00200	63.3 0.199	0.0971 0.00200	0.390 0.00198	13.7 0.200	0.0442 0.00200
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Aug-05-19 18:00	Aug-05-19 18:00	Aug-05-19 18:00	Aug-05-19 18:00	Aug-05-19 18:00	Aug-05-19 18:00
	<i>Analyzed:</i>	Aug-06-19 03:53	Aug-06-19 03:59	Aug-06-19 04:04	Aug-06-19 04:20	Aug-06-19 04:26	Aug-06-19 04:42
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		364 5.03	4350 24.9	343 5.02	78.3 4.96	72.5 5.01	1100 4.99
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Aug-05-19 10:00	Aug-05-19 10:00	Aug-05-19 10:00	Aug-05-19 10:00	Aug-05-19 10:00	Aug-05-19 10:00
	<i>Analyzed:</i>	Aug-06-19 00:13	Aug-06-19 00:36	Aug-06-19 01:00	Aug-06-19 01:23	Aug-06-19 02:10	Aug-06-19 02:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	2140 15.0	<14.9 14.9	37.3 15.0	515 15.0	<15.0 15.0
Diesel Range Organics (DRO)		37.0 15.0	3410 15.0	37.8 14.9	235 15.0	1030 15.0	33.6 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	135 15.0	<14.9 14.9	18.1 15.0	44.7 15.0	<15.0 15.0
Total TPH		37.0 15.0	5690 15.0	37.8 14.9	290 15.0	1590 15.0	33.6 15.0
Total GRO-DRO		37.0 15.0	5550 15.0	37.8 14.9	272 15.0	1550 15.0	33.6 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
Project Assistant



Certificate of Analysis Summary 632825

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id: 2RP-5309

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Aug-01-19 04:05 pm

Report Date: 08-AUG-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	632825-013	632825-014				
	Field Id:	PH11B	PH11C				
	Depth:	12- ft	14- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Jul-31-19 16:10	Jul-31-19 16:15				
BTEX by EPA 8021B SUB: T104704400-18-16	Extracted:	Aug-03-19 17:30	Aug-03-19 17:30				
	Analyzed:	Aug-05-19 05:48	Aug-05-19 06:09				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		0.00382 0.00199	<0.00199 0.00199				
Toluene		0.0226 0.00199	0.00449 0.00199				
Ethylbenzene		0.0176 0.00199	0.0111 0.00199				
m,p-Xylenes		0.0926 0.00398	0.0101 0.00398				
o-Xylene		0.0334 0.00199	0.0169 0.00199				
Total Xylenes		0.126 0.00199	0.0270 0.00199				
Total BTEX		0.170 0.00199	0.0426 0.00199				
Chloride by EPA 300 SUB: T104704400-18-16	Extracted:	Aug-05-19 18:00	Aug-05-19 18:00				
	Analyzed:	Aug-06-19 04:47	Aug-06-19 04:53				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		1020 25.2	588 4.96				
TPH by SW8015 Mod SUB: T104704400-18-16	Extracted:	Aug-05-19 10:00	Aug-05-19 10:00				
	Analyzed:	Aug-06-19 02:57	Aug-06-19 03:20				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		26.1 15.0	<14.9 14.9				
Diesel Range Organics (DRO)		133 15.0	29.8 14.9				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9				
Total TPH		159 15.0	29.8 14.9				
Total GRO-DRO		159 15.0	29.8 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 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH07**
Lab Sample Id: 632825-001

Matrix: Soil
Date Collected: 07.31.19 09.30

Date Received: 08.01.19 16.05
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3097578

Date Prep: 08.05.19 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.21	5.05	mg/kg	08.06.19 02.54		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097581

Date Prep: 08.05.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.05.19 21.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.05.19 21.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.05.19 21.04	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.05.19 21.04	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.05.19 21.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	08.05.19 21.04	
o-Terphenyl	84-15-1	74	%	70-135	08.05.19 21.04	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH07**
Lab Sample Id: 632825-001

Matrix: Soil
Date Collected: 07.31.19 09.30

Date Received: 08.01.19 16.05
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097680

Prep Method: SW5030B

% Moisture:

Date Prep: 08.03.19 17.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.05.19 01.09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.05.19 01.09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.05.19 01.09	U	1
m,p-Xylenes	179601-23-1	0.00838	0.00399	mg/kg	08.05.19 01.09		1
o-Xylene	95-47-6	0.00269	0.00200	mg/kg	08.05.19 01.09		1
Total Xylenes	1330-20-7	0.0111	0.00200	mg/kg	08.05.19 01.09		1
Total BTEX		0.0111	0.00200	mg/kg	08.05.19 01.09		1
		% Recovery					
Surrogate	Cas Number		Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.05.19 01.09		
4-Bromofluorobenzene	460-00-4	106	%	70-130	08.05.19 01.09		



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH07A**
Lab Sample Id: 632825-002

Matrix: Soil
Date Collected: 07.31.19 09.45

Date Received: 08.01.19 16.05
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3097726

Date Prep: 08.07.19 09.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.42	4.99	mg/kg	08.07.19 11.01		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097581

Date Prep: 08.05.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.05.19 22.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.05.19 22.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.05.19 22.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.05.19 22.15	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.05.19 22.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	08.05.19 22.15	
o-Terphenyl	84-15-1	64	%	70-135	08.05.19 22.15	**



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH07A**
Lab Sample Id: 632825-002

Matrix: Soil
Date Collected: 07.31.19 09.45

Date Received: 08.01.19 16.05
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097680

Date Prep: 08.03.19 17.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.05.19 01.29	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.05.19 01.29	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.05.19 01.29	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.05.19 01.29	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.05.19 01.29	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.05.19 01.29	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.05.19 01.29	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		114	%	70-130	08.05.19 01.29	
1,4-Difluorobenzene	540-36-3		98	%	70-130	08.05.19 01.29	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH08**
Lab Sample Id: 632825-003

Matrix: Soil
Date Collected: 07.31.19 10.05

Date Received: 08.01.19 16.05
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3097578

Date Prep: 08.05.19 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.7	4.96	mg/kg	08.06.19 03.10		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097581

Date Prep: 08.05.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.05.19 22.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	51.3	15.0	mg/kg	08.05.19 22.39		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.05.19 22.39	U	1
Total TPH	PHC635	51.3	15.0	mg/kg	08.05.19 22.39		1
Total GRO-DRO	PHC628	51.3	15.0	mg/kg	08.05.19 22.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	08.05.19 22.39	
o-Terphenyl	84-15-1	68	%	70-135	08.05.19 22.39	**



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH08**
Lab Sample Id: 632825-003

Matrix: Soil
Date Collected: 07.31.19 10.05

Date Received: 08.01.19 16.05
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097680

Date Prep: 08.03.19 17.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.05.19 01.49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.05.19 01.49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.05.19 01.49	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.05.19 01.49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.05.19 01.49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.05.19 01.49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.05.19 01.49	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		102	%	70-130	08.05.19 01.49	
4-Bromofluorobenzene	460-00-4		122	%	70-130	08.05.19 01.49	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH08A**
Lab Sample Id: 632825-004

Matrix: Soil
Date Collected: 07.31.19 10.10

Date Received: 08.01.19 16.05
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3097578

Date Prep: 08.05.19 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.58	4.96	mg/kg	08.06.19 03.15		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097581

Date Prep: 08.05.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.05.19 23.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.05.19 23.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.05.19 23.02	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.05.19 23.02	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.05.19 23.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	08.05.19 23.02	
o-Terphenyl	84-15-1	72	%	70-135	08.05.19 23.02	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH08A**
Lab Sample Id: 632825-004

Matrix: Soil
Date Collected: 07.31.19 10.10

Date Received: 08.01.19 16.05
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097680

Date Prep: 08.03.19 17.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.05.19 02.09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.05.19 02.09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.05.19 02.09	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.05.19 02.09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.05.19 02.09	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.05.19 02.09	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.05.19 02.09	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		100	%	70-130	08.05.19 02.09	
4-Bromofluorobenzene	460-00-4		119	%	70-130	08.05.19 02.09	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH09** Matrix: Soil Date Received: 08.01.19 16.05
 Lab Sample Id: 632825-005 Date Collected: 07.31.19 10.55 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 08.05.19 18.00 Basis: Wet Weight
 Seq Number: 3097578 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1770	25.1	mg/kg	08.06.19 03.21		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.05.19 10.00 Basis: Wet Weight
 Seq Number: 3097581 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	1350	15.0	mg/kg	08.05.19 23.26		1
Diesel Range Organics (DRO)	C10C28DRO	2630	15.0	mg/kg	08.05.19 23.26		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	122	15.0	mg/kg	08.05.19 23.26		1
Total TPH	PHC635	4100	15.0	mg/kg	08.05.19 23.26		1
Total GRO-DRO	PHC628	3980	15.0	mg/kg	08.05.19 23.26		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	08.05.19 23.26	
o-Terphenyl	84-15-1	89	%	70-135	08.05.19 23.26	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH09**
Lab Sample Id: 632825-005

Matrix: Soil
Date Collected: 07.31.19 10.55

Date Received: 08.01.19 16.05
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097680

Date Prep: 08.03.19 17.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.213	0.200	mg/kg	08.05.19 02.29		100
Toluene	108-88-3	3.68	0.200	mg/kg	08.05.19 02.29		100
Ethylbenzene	100-41-4	0.420	0.200	mg/kg	08.05.19 02.29		100
m,p-Xylenes	179601-23-1	18.1	0.400	mg/kg	08.05.19 02.29		100
o-Xylene	95-47-6	5.52	0.200	mg/kg	08.05.19 02.29		100
Total Xylenes	1330-20-7	23.6	0.200	mg/kg	08.05.19 02.29		100
Total BTEX		27.9	0.200	mg/kg	08.05.19 02.29		100
% Recovery							
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		137	%	70-130	08.05.19 02.29	**
1,4-Difluorobenzene	540-36-3		108	%	70-130	08.05.19 02.29	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH09A**
Lab Sample Id: 632825-006

Matrix: Soil
Date Collected: 07.31.19 11.20

Date Received: 08.01.19 16.05
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3097578

Date Prep: 08.05.19 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5400	50.0	mg/kg	08.06.19 03.26		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097581

Date Prep: 08.05.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	22.3	15.0	mg/kg	08.05.19 23.49		1
Diesel Range Organics (DRO)	C10C28DRO	87.5	15.0	mg/kg	08.05.19 23.49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.05.19 23.49	U	1
Total TPH	PHC635	110	15.0	mg/kg	08.05.19 23.49		1
Total GRO-DRO	PHC628	110	15.0	mg/kg	08.05.19 23.49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.05.19 23.49	
o-Terphenyl	84-15-1	81	%	70-135	08.05.19 23.49	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH09A**
Lab Sample Id: 632825-006

Matrix: Soil
Date Collected: 07.31.19 11.20

Date Received: 08.01.19 16.05
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097680

Prep Method: SW5030B

% Moisture:

Date Prep: 08.03.19 17.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00444	0.00199	mg/kg	08.05.19 02.49		1
Toluene	108-88-3	0.0545	0.00199	mg/kg	08.05.19 02.49		1
Ethylbenzene	100-41-4	0.0158	0.00199	mg/kg	08.05.19 02.49		1
m,p-Xylenes	179601-23-1	0.134	0.00398	mg/kg	08.05.19 02.49		1
o-Xylene	95-47-6	0.0504	0.00199	mg/kg	08.05.19 02.49		1
Total Xylenes	1330-20-7	0.184	0.00199	mg/kg	08.05.19 02.49		1
Total BTEX		0.259	0.00199	mg/kg	08.05.19 02.49		1
% Recovery							
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		131	%	70-130	08.05.19 02.49	**
1,4-Difluorobenzene	540-36-3		106	%	70-130	08.05.19 02.49	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH09B**
Lab Sample Id: 632825-007

Matrix: Soil
Date Collected: 07.31.19 13.05

Date Received: 08.01.19 16.05
Sample Depth: 10 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3097578

Date Prep: 08.05.19 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	364	5.03	mg/kg	08.06.19 03.53		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097581

Date Prep: 08.05.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.06.19 00.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	37.0	15.0	mg/kg	08.06.19 00.13		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.06.19 00.13	U	1
Total TPH	PHC635	37.0	15.0	mg/kg	08.06.19 00.13		1
Total GRO-DRO	PHC628	37.0	15.0	mg/kg	08.06.19 00.13		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.06.19 00.13	
o-Terphenyl	84-15-1	70	%	70-135	08.06.19 00.13	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH09B**
Lab Sample Id: 632825-007

Matrix: Soil
Date Collected: 07.31.19 13.05

Date Received: 08.01.19 16.05
Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097680

Prep Method: SW5030B

% Moisture:

Date Prep: 08.03.19 17.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.05.19 03.10	U	1
Toluene	108-88-3	0.00210	0.00200	mg/kg	08.05.19 03.10		1
Ethylbenzene	100-41-4	0.0144	0.00200	mg/kg	08.05.19 03.10		1
m,p-Xylenes	179601-23-1	0.00591	0.00401	mg/kg	08.05.19 03.10		1
o-Xylene	95-47-6	0.0135	0.00200	mg/kg	08.05.19 03.10		1
Total Xylenes	1330-20-7	0.0194	0.00200	mg/kg	08.05.19 03.10		1
Total BTEX		0.0359	0.00200	mg/kg	08.05.19 03.10		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	87		%	70-130	08.05.19 03.10	
4-Bromofluorobenzene	460-00-4	102		%	70-130	08.05.19 03.10	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH10**
Lab Sample Id: 632825-008

Matrix: Soil
Date Collected: 07.31.19 13.45

Date Received: 08.01.19 16.05
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3097578

Date Prep: 08.05.19 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4350	24.9	mg/kg	08.06.19 03.59		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097581

Date Prep: 08.05.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	2140	15.0	mg/kg	08.06.19 00.36		1
Diesel Range Organics (DRO)	C10C28DRO	3410	15.0	mg/kg	08.06.19 00.36		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	135	15.0	mg/kg	08.06.19 00.36		1
Total TPH	PHC635	5690	15.0	mg/kg	08.06.19 00.36		1
Total GRO-DRO	PHC628	5550	15.0	mg/kg	08.06.19 00.36		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	08.06.19 00.36	
o-Terphenyl	84-15-1	108	%	70-135	08.06.19 00.36	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH10**
Lab Sample Id: 632825-008

Matrix: Soil
Date Collected: 07.31.19 13.45

Date Received: 08.01.19 16.05
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097680

Prep Method: SW5030B

% Moisture:

Date Prep: 08.03.19 17.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.863	0.199	mg/kg	08.05.19 03.30		100
Toluene	108-88-3	11.1	0.199	mg/kg	08.05.19 03.30		100
Ethylbenzene	100-41-4	3.03	0.199	mg/kg	08.05.19 03.30		100
m,p-Xylenes	179601-23-1	36.6	0.398	mg/kg	08.05.19 03.30		100
o-Xylene	95-47-6	11.7	0.199	mg/kg	08.05.19 03.30		100
Total Xylenes	1330-20-7	48.3	0.199	mg/kg	08.05.19 03.30		100
Total BTEX		63.3	0.199	mg/kg	08.05.19 03.30		100
% Recovery							
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		178	%	70-130	08.05.19 03.30	**
1,4-Difluorobenzene	540-36-3		109	%	70-130	08.05.19 03.30	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH10A**
Lab Sample Id: 632825-009

Matrix: Soil
Date Collected: 07.31.19 14.05

Date Received: 08.01.19 16.05
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3097578

Date Prep: 08.05.19 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	343	5.02	mg/kg	08.06.19 04.04		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097581

Date Prep: 08.05.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.06.19 01.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	37.8	14.9	mg/kg	08.06.19 01.00		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	08.06.19 01.00	U	1
Total TPH	PHC635	37.8	14.9	mg/kg	08.06.19 01.00		1
Total GRO-DRO	PHC628	37.8	14.9	mg/kg	08.06.19 01.00		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	08.06.19 01.00	
o-Terphenyl	84-15-1	72	%	70-135	08.06.19 01.00	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH10A**
Lab Sample Id: 632825-009

Matrix: Soil
Date Collected: 07.31.19 14.05

Date Received: 08.01.19 16.05
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097680

Date Prep: 08.03.19 17.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00531	0.00200	mg/kg	08.05.19 03.50		1
Toluene	108-88-3	0.0313	0.00200	mg/kg	08.05.19 03.50		1
Ethylbenzene	100-41-4	0.0104	0.00200	mg/kg	08.05.19 03.50		1
m,p-Xylenes	179601-23-1	0.0342	0.00400	mg/kg	08.05.19 03.50		1
o-Xylene	95-47-6	0.0159	0.00200	mg/kg	08.05.19 03.50		1
Total Xylenes	1330-20-7	0.0501	0.00200	mg/kg	08.05.19 03.50		1
Total BTEX		0.0971	0.00200	mg/kg	08.05.19 03.50		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118		%	70-130	08.05.19 03.50	
1,4-Difluorobenzene	540-36-3	105		%	70-130	08.05.19 03.50	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH10B**
Lab Sample Id: 632825-010

Matrix: Soil
Date Collected: 07.31.19 14.20

Date Received: 08.01.19 16.05
Sample Depth: 9 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3097578

Date Prep: 08.05.19 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	78.3	4.96	mg/kg	08.06.19 04.20		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097581

Date Prep: 08.05.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	37.3	15.0	mg/kg	08.06.19 01.23		1
Diesel Range Organics (DRO)	C10C28DRO	235	15.0	mg/kg	08.06.19 01.23		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	18.1	15.0	mg/kg	08.06.19 01.23		1
Total TPH	PHC635	290	15.0	mg/kg	08.06.19 01.23		1
Total GRO-DRO	PHC628	272	15.0	mg/kg	08.06.19 01.23		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	08.06.19 01.23	
o-Terphenyl	84-15-1	84	%	70-135	08.06.19 01.23	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH10B**
Lab Sample Id: 632825-010

Matrix: Soil
Date Collected: 07.31.19 14.20

Date Received: 08.01.19 16.05
Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097680

Prep Method: SW5030B

% Moisture:

Date Prep: 08.03.19 17.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00467	0.00198	mg/kg	08.05.19 04.10		1
Toluene	108-88-3	0.0829	0.00198	mg/kg	08.05.19 04.10		1
Ethylbenzene	100-41-4	0.0193	0.00198	mg/kg	08.05.19 04.10		1
m,p-Xylenes	179601-23-1	0.209	0.00396	mg/kg	08.05.19 04.10		1
o-Xylene	95-47-6	0.0743	0.00198	mg/kg	08.05.19 04.10		1
Total Xylenes	1330-20-7	0.283	0.00198	mg/kg	08.05.19 04.10		1
Total BTEX		0.390	0.00198	mg/kg	08.05.19 04.10		1
% Recovery							
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		110	%	70-130	08.05.19 04.10	
4-Bromofluorobenzene	460-00-4		131	%	70-130	08.05.19 04.10	**



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH11**
Lab Sample Id: 632825-011

Matrix: Soil
Date Collected: 07.31.19 15.30

Date Received: 08.01.19 16.05
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3097578

Date Prep: 08.05.19 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	72.5	5.01	mg/kg	08.06.19 04.26		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097581

Date Prep: 08.05.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	515	15.0	mg/kg	08.06.19 02.10		1
Diesel Range Organics (DRO)	C10C28DRO	1030	15.0	mg/kg	08.06.19 02.10		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	44.7	15.0	mg/kg	08.06.19 02.10		1
Total TPH	PHC635	1590	15.0	mg/kg	08.06.19 02.10		1
Total GRO-DRO	PHC628	1550	15.0	mg/kg	08.06.19 02.10		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	08.06.19 02.10	
o-Terphenyl	84-15-1	96	%	70-135	08.06.19 02.10	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH11**
Lab Sample Id: 632825-011

Matrix: Soil
Date Collected: 07.31.19 15.30

Date Received: 08.01.19 16.05
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097680

Date Prep: 08.03.19 17.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.200	0.200	mg/kg	08.05.19 06.49	U	100
Toluene	108-88-3	2.07	0.200	mg/kg	08.05.19 06.49		100
Ethylbenzene	100-41-4	1.02	0.200	mg/kg	08.05.19 06.49		100
m,p-Xylenes	179601-23-1	7.79	0.401	mg/kg	08.05.19 06.49		100
o-Xylene	95-47-6	2.85	0.200	mg/kg	08.05.19 06.49		100
Total Xylenes	1330-20-7	10.6	0.200	mg/kg	08.05.19 06.49		100
Total BTEX		13.7	0.200	mg/kg	08.05.19 06.49		100
% Recovery							
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		105	%	70-130	08.05.19 06.49	
4-Bromofluorobenzene	460-00-4		131	%	70-130	08.05.19 06.49	**



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH11A**
Lab Sample Id: 632825-012

Matrix: Soil
Date Collected: 07.31.19 15.55

Date Received: 08.01.19 16.05
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3097578

Date Prep: 08.05.19 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1100	4.99	mg/kg	08.06.19 04.42		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097581

Date Prep: 08.05.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.06.19 02.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	33.6	15.0	mg/kg	08.06.19 02.33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.06.19 02.33	U	1
Total TPH	PHC635	33.6	15.0	mg/kg	08.06.19 02.33		1
Total GRO-DRO	PHC628	33.6	15.0	mg/kg	08.06.19 02.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	08.06.19 02.33	
o-Terphenyl	84-15-1	93	%	70-135	08.06.19 02.33	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH11A**
Lab Sample Id: 632825-012

Matrix: Soil
Date Collected: 07.31.19 15.55

Date Received: 08.01.19 16.05
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097680

Prep Method: SW5030B

% Moisture:

Date Prep: 08.03.19 17.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00333	0.00200	mg/kg	08.05.19 05.28		1
Toluene	108-88-3	0.0124	0.00200	mg/kg	08.05.19 05.28		1
Ethylbenzene	100-41-4	0.00244	0.00200	mg/kg	08.05.19 05.28		1
m,p-Xylenes	179601-23-1	0.0178	0.00399	mg/kg	08.05.19 05.28		1
o-Xylene	95-47-6	0.00827	0.00200	mg/kg	08.05.19 05.28		1
Total Xylenes	1330-20-7	0.0261	0.00200	mg/kg	08.05.19 05.28		1
Total BTEX		0.0442	0.00200	mg/kg	08.05.19 05.28		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	08.05.19 05.28		
4-Bromofluorobenzene	460-00-4	106	%	70-130	08.05.19 05.28		



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH11B**
Lab Sample Id: 632825-013

Matrix: Soil
Date Collected: 07.31.19 16.10

Date Received: 08.01.19 16.05
Sample Depth: 12 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3097578

Date Prep: 08.05.19 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1020	25.2	mg/kg	08.06.19 04.47		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097581

Date Prep: 08.05.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	26.1	15.0	mg/kg	08.06.19 02.57		1
Diesel Range Organics (DRO)	C10C28DRO	133	15.0	mg/kg	08.06.19 02.57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.06.19 02.57	U	1
Total TPH	PHC635	159	15.0	mg/kg	08.06.19 02.57		1
Total GRO-DRO	PHC628	159	15.0	mg/kg	08.06.19 02.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	08.06.19 02.57	
o-Terphenyl	84-15-1	91	%	70-135	08.06.19 02.57	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH11B**
Lab Sample Id: 632825-013

Matrix: Soil
Date Collected: 07.31.19 16.10

Date Received: 08.01.19 16.05
Sample Depth: 12 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097680

Date Prep: 08.03.19 17.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00382	0.00199	mg/kg	08.05.19 05.48		1
Toluene	108-88-3	0.0226	0.00199	mg/kg	08.05.19 05.48		1
Ethylbenzene	100-41-4	0.0176	0.00199	mg/kg	08.05.19 05.48		1
m,p-Xylenes	179601-23-1	0.0926	0.00398	mg/kg	08.05.19 05.48		1
o-Xylene	95-47-6	0.0334	0.00199	mg/kg	08.05.19 05.48		1
Total Xylenes	1330-20-7	0.126	0.00199	mg/kg	08.05.19 05.48		1
Total BTEX		0.170	0.00199	mg/kg	08.05.19 05.48		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105		%	70-130	08.05.19 05.48	
4-Bromofluorobenzene	460-00-4	115		%	70-130	08.05.19 05.48	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH11C**
Lab Sample Id: 632825-014

Matrix: Soil
Date Collected: 07.31.19 16.15

Date Received: 08.01.19 16.05
Sample Depth: 14 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3097578

Date Prep: 08.05.19 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	588	4.96	mg/kg	08.06.19 04.53		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097581

Date Prep: 08.05.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.06.19 03.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	29.8	14.9	mg/kg	08.06.19 03.20		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	08.06.19 03.20	U	1
Total TPH	PHC635	29.8	14.9	mg/kg	08.06.19 03.20		1
Total GRO-DRO	PHC628	29.8	14.9	mg/kg	08.06.19 03.20		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	08.06.19 03.20	
o-Terphenyl	84-15-1	93	%	70-135	08.06.19 03.20	



Certificate of Analytical Results 632825

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH11C**
Lab Sample Id: 632825-014

Matrix: Soil
Date Collected: 07.31.19 16.15

Date Received: 08.01.19 16.05
Sample Depth: 14 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3097680

Date Prep: 08.03.19 17.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.05.19 06.09	U	1
Toluene	108-88-3	0.00449	0.00199	mg/kg	08.05.19 06.09		1
Ethylbenzene	100-41-4	0.0111	0.00199	mg/kg	08.05.19 06.09		1
m,p-Xylenes	179601-23-1	0.0101	0.00398	mg/kg	08.05.19 06.09		1
o-Xylene	95-47-6	0.0169	0.00199	mg/kg	08.05.19 06.09		1
Total Xylenes	1330-20-7	0.0270	0.00199	mg/kg	08.05.19 06.09		1
Total BTEX		0.0426	0.00199	mg/kg	08.05.19 06.09		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	95		%	70-130	08.05.19 06.09	
4-Bromofluorobenzene	460-00-4	122		%	70-130	08.05.19 06.09	



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 Obs Well #1

Analytical Method: Chloride by EPA 300

Seq Number: 3097578

MB Sample Id: 7683563-1-BLK

Matrix: Solid

LCS Sample Id: 7683563-1-BKS

Prep Method: E300P

Date Prep: 08.05.19

LCSD Sample Id: 7683563-1-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	256	102	257	103	90-110	0	20	mg/kg	08.06.19 02:43	

Analytical Method: Chloride by EPA 300

Seq Number: 3097726

MB Sample Id: 7683628-1-BLK

Matrix: Solid

LCS Sample Id: 7683628-1-BKS

Prep Method: E300P

Date Prep: 08.07.19

LCSD Sample Id: 7683628-1-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	262	105	262	105	90-110	0	20	mg/kg	08.07.19 09:39	

Analytical Method: Chloride by EPA 300

Seq Number: 3097578

Parent Sample Id: 632825-001

Matrix: Soil

MS Sample Id: 632825-001 S

Prep Method: E300P

Date Prep: 08.05.19

MSD Sample Id: 632825-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.21	253	269	104	268	104	90-110	0	20	mg/kg	08.06.19 02:59	

Analytical Method: Chloride by EPA 300

Seq Number: 3097578

Parent Sample Id: 632825-009

Matrix: Soil

MS Sample Id: 632825-009 S

Prep Method: E300P

Date Prep: 08.05.19

MSD Sample Id: 632825-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	343	251	588	98	588	98	90-110	0	20	mg/kg	08.06.19 04:09	

Analytical Method: Chloride by EPA 300

Seq Number: 3097726

Parent Sample Id: 633147-001

Matrix: Soil

MS Sample Id: 633147-001 S

Prep Method: E300P

Date Prep: 08.07.19

MSD Sample Id: 633147-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	520	253	768	98	769	98	90-110	0	20	mg/kg	08.07.19 09:58	

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

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

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

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



LT Environmental, Inc.

Remuda 25 Obs Well #1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3097581

MB Sample Id: 7683530-1-BLK

Matrix: Solid

LCS Sample Id: 7683530-1-BKS

Prep Method: TX1005P

Date Prep: 08.05.19

LCSD Sample Id: 7683530-1-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	1140	114	1060	106	70-135	7	20	mg/kg	08.05.19 20:17	
Diesel Range Organics (DRO)	<8.13	1000	1180	118	1100	110	70-135	7	20	mg/kg	08.05.19 20:17	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date	Flag		
1-Chlorooctane	97		100		90		70-135	%	08.05.19 20:17			
o-Terphenyl	88		88		85		70-135	%	08.05.19 20:17			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3097581

Parent Sample Id: 632825-001

Matrix: Soil

MS Sample Id: 632825-001 S

Prep Method: TX1005P

Date Prep: 08.05.19

MSD Sample Id: 632825-001 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)	9.21	996	1090	109	1080	107	70-135	1	20	mg/kg	08.05.19 21:28	
Diesel Range Organics (DRO)	13.5	996	1110	110	1110	110	70-135	0	20	mg/kg	08.05.19 21:28	
Surrogate				MS %Rec	MS Flag	MSD %Rec	MSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane				96		96			70-135	%	08.05.19 21:28	
o-Terphenyl				90		87			70-135	%	08.05.19 21:28	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3097680

MB Sample Id: 7683436-1-BLK

Matrix: Solid

LCS Sample Id: 7683436-1-BKS

Prep Method: SW5030B

Date Prep: 08.03.19

LCSD Sample Id: 7683436-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0929	93	0.102	102	70-130	9	35	mg/kg	08.04.19 23:09	
Toluene	<0.000456	0.100	0.0869	87	0.0960	96	70-130	10	35	mg/kg	08.04.19 23:09	
Ethylbenzene	<0.000565	0.100	0.0875	88	0.0967	97	70-130	10	35	mg/kg	08.04.19 23:09	
m,p-Xylenes	<0.00101	0.200	0.176	88	0.195	98	70-130	10	35	mg/kg	08.04.19 23:09	
o-Xylene	<0.000344	0.100	0.0916	92	0.102	102	70-130	11	35	mg/kg	08.04.19 23:09	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date	Flag		
1,4-Difluorobenzene	101		100		102		70-130	%	08.04.19 23:09			
4-Bromofluorobenzene	106		103		108		70-130	%	08.04.19 23:09			

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.

Remuda 25 Obs Well #1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3097680

Parent Sample Id: 632825-001

Matrix: Soil

MS Sample Id: 632825-001 S

Prep Method: SW5030B

Date Prep: 08.03.19

MSD Sample Id: 632825-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.0806	81	0.0846	85	70-130	5	35	mg/kg	08.04.19 23:50	
Toluene	0.00164	0.0992	0.0758	75	0.0806	79	70-130	6	35	mg/kg	08.04.19 23:50	
Ethylbenzene	0.000659	0.0992	0.0756	76	0.0803	80	70-130	6	35	mg/kg	08.04.19 23:50	
m,p-Xylenes	0.00838	0.198	0.156	75	0.165	78	70-130	6	35	mg/kg	08.04.19 23:50	
o-Xylene	0.00269	0.0992	0.0804	78	0.0850	82	70-130	6	35	mg/kg	08.04.19 23:50	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		100		70-130	%	08.04.19 23:50
4-Bromofluorobenzene	106		108		70-130	%	08.04.19 23:50

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: 1632825

Houston, TX (281) 240-4200 Dallas, TX (214) 802-0300 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) 382-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 420-2000

www.xenco.com Page 1 of 2

Project Manager:	Dan Moir	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:	dmair@xenco.com kmolles@xtoiv.com
Project Name:	Remedial 25-085 (H1 #)	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	2.RP-5309	Rush 3 day	
Sample's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒
	Temperature (°C):	2.0	Thermometer ID:	TN007
	Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.2
	Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	14
Sample Custody Seals:	Yes ☐ No ☒ N/A			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 8-8021)	Chloride (EPA 800.0)	ANALYSIS REQUEST										Work Order Notes																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
PH07	S	07/11/19	0930	1'	1	X	X	X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PFM 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

Note: 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>[Signature]</i>	<i>[Signature]</i>	8/19/16:05			



Chain of Custody

Work Order No:

032825

Houston, TX (281) 244-4200 Dallas, TX (214) 802-0000 San Antonio, TX (210) 509-3334
 Midland, TX (432-704-4440) El Paso, TX (915) 565-3443 Lubbock, TX (806) 794-1295
 Phoenix, AZ (480) 355-0000 Atlanta, GA (770) 449-8000 Tampa, FL (813) 620-2000

www.xenco.com

Page 2 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litton
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:	Carsbad, NM
Phone:	432-704-5178	Email:	dmoir@xenco.com kmoir@xenco.com

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

Project Name:	Remed 28 Obs Well #1	Turn Around	☐
Project Number:	2RP-5309	Routine	☐
P.O. Number:		Rush: 3 days	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	22.0	Thermometer ID				
Received intact:	Yes	No	Correction Factor:			
Cooler Custody Seal:	Yes	No	Total Containers:			
Sample Ends/Seals:	Yes	No				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 8-8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST										Work Order Notes																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
PH11	S	07/31/19	1530	1'	1	X	X	X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas T1 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

Note: 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 McAfee</i>	<i>Robert McAfee</i>	8/1/19 16:05			



Inter-Office Shipment

Page 1 of 2

IOS Number **45496**

Date/Time: 08/02/19 10:49

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
632825-001	S	PH07	07/31/19 09:30	SW8021B	BTEX by EPA 8021B	08/05/19	08/14/19	JKR	BR4FBZ BZ BZME EBZ X	
632825-001	S	PH07	07/31/19 09:30	E300_CL	Chloride by EPA 300	08/05/19	01/27/20	JKR	CL	
632825-001	S	PH07	07/31/19 09:30	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/14/19	JKR	GRO-DRO PHCC10C28 PI	
632825-002	S	PH07A	07/31/19 09:45	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/14/19	JKR	GRO-DRO PHCC10C28 PI	
632825-002	S	PH07A	07/31/19 09:45	E300_CL	Chloride by EPA 300	08/05/19	01/27/20	JKR	CL	
632825-002	S	PH07A	07/31/19 09:45	SW8021B	BTEX by EPA 8021B	08/05/19	08/14/19	JKR	BR4FBZ BZ BZME EBZ X	
632825-003	S	PH08	07/31/19 10:05	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/14/19	JKR	GRO-DRO PHCC10C28 PI	
632825-003	S	PH08	07/31/19 10:05	E300_CL	Chloride by EPA 300	08/05/19	01/27/20	JKR	CL	
632825-003	S	PH08	07/31/19 10:05	SW8021B	BTEX by EPA 8021B	08/05/19	08/14/19	JKR	BR4FBZ BZ BZME EBZ X	
632825-004	S	PH08A	07/31/19 10:10	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/14/19	JKR	GRO-DRO PHCC10C28 PI	
632825-004	S	PH08A	07/31/19 10:10	E300_CL	Chloride by EPA 300	08/05/19	01/27/20	JKR	CL	
632825-004	S	PH08A	07/31/19 10:10	SW8021B	BTEX by EPA 8021B	08/05/19	08/14/19	JKR	BR4FBZ BZ BZME EBZ X	
632825-005	S	PH09	07/31/19 10:55	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/14/19	JKR	GRO-DRO PHCC10C28 PI	
632825-005	S	PH09	07/31/19 10:55	SW8021B	BTEX by EPA 8021B	08/05/19	08/14/19	JKR	BR4FBZ BZ BZME EBZ X	
632825-005	S	PH09	07/31/19 10:55	E300_CL	Chloride by EPA 300	08/05/19	01/27/20	JKR	CL	
632825-006	S	PH09A	07/31/19 11:20	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/14/19	JKR	GRO-DRO PHCC10C28 PI	
632825-006	S	PH09A	07/31/19 11:20	E300_CL	Chloride by EPA 300	08/05/19	01/27/20	JKR	CL	
632825-006	S	PH09A	07/31/19 11:20	SW8021B	BTEX by EPA 8021B	08/05/19	08/14/19	JKR	BR4FBZ BZ BZME EBZ X	
632825-007	S	PH09B	07/31/19 13:05	E300_CL	Chloride by EPA 300	08/05/19	01/27/20	JKR	CL	
632825-007	S	PH09B	07/31/19 13:05	SW8021B	BTEX by EPA 8021B	08/05/19	08/14/19	JKR	BR4FBZ BZ BZME EBZ X	
632825-007	S	PH09B	07/31/19 13:05	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/14/19	JKR	GRO-DRO PHCC10C28 PI	
632825-008	S	PH10	07/31/19 13:45	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/14/19	JKR	GRO-DRO PHCC10C28 PI	
632825-008	S	PH10	07/31/19 13:45	SW8021B	BTEX by EPA 8021B	08/05/19	08/14/19	JKR	BR4FBZ BZ BZME EBZ X	
632825-008	S	PH10	07/31/19 13:45	E300_CL	Chloride by EPA 300	08/05/19	01/27/20	JKR	CL	
632825-009	S	PH10A	07/31/19 14:05	SW8021B	BTEX by EPA 8021B	08/05/19	08/14/19	JKR	BR4FBZ BZ BZME EBZ X	



Inter-Office Shipment

Page 2 of 2

IOS Number **45496**

Date/Time: 08/02/19 10:49

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
632825-009	S	PH10A	07/31/19 14:05	E300_CL	Chloride by EPA 300	08/05/19	01/27/20	JKR	CL	
632825-009	S	PH10A	07/31/19 14:05	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/14/19	JKR	GRO-DRO PHCC10C28 PI	
632825-010	S	PH10B	07/31/19 14:20	SW8021B	BTEX by EPA 8021B	08/05/19	08/14/19	JKR	BR4FBZ BZ BZME EBZ X	
632825-010	S	PH10B	07/31/19 14:20	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/14/19	JKR	GRO-DRO PHCC10C28 PI	
632825-010	S	PH10B	07/31/19 14:20	E300_CL	Chloride by EPA 300	08/05/19	01/27/20	JKR	CL	
632825-011	S	PH11	07/31/19 15:30	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/14/19	JKR	GRO-DRO PHCC10C28 PI	
632825-011	S	PH11	07/31/19 15:30	E300_CL	Chloride by EPA 300	08/05/19	01/27/20	JKR	CL	
632825-011	S	PH11	07/31/19 15:30	SW8021B	BTEX by EPA 8021B	08/05/19	08/14/19	JKR	BR4FBZ BZ BZME EBZ X	
632825-012	S	PH11A	07/31/19 15:55	E300_CL	Chloride by EPA 300	08/05/19	01/27/20	JKR	CL	
632825-012	S	PH11A	07/31/19 15:55	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/14/19	JKR	GRO-DRO PHCC10C28 PI	
632825-012	S	PH11A	07/31/19 15:55	SW8021B	BTEX by EPA 8021B	08/05/19	08/14/19	JKR	BR4FBZ BZ BZME EBZ X	
632825-013	S	PH11B	07/31/19 16:10	E300_CL	Chloride by EPA 300	08/05/19	01/27/20	JKR	CL	
632825-013	S	PH11B	07/31/19 16:10	SW8021B	BTEX by EPA 8021B	08/05/19	08/14/19	JKR	BR4FBZ BZ BZME EBZ X	
632825-013	S	PH11B	07/31/19 16:10	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/14/19	JKR	GRO-DRO PHCC10C28 PI	
632825-014	S	PH11C	07/31/19 16:15	E300_CL	Chloride by EPA 300	08/05/19	01/27/20	JKR	CL	
632825-014	S	PH11C	07/31/19 16:15	SW8021B	BTEX by EPA 8021B	08/05/19	08/14/19	JKR	BR4FBZ BZ BZME EBZ X	
632825-014	S	PH11C	07/31/19 16:15	SW8015MOD_NM	TPH by SW8015 Mod	08/05/19	08/14/19	JKR	GRO-DRO PHCC10C28 PI	

Inter Office Shipment or Sample Comments:

Relinquished By:

Jessica Kramer

Received By:

Katie Lowe

Date Relinquished: 08/02/2019

Date Received: 08/03/2019 16:00

Cooler Temperature: 1.6



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 45496

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sent By: Elizabeth McClellan

Date Sent: 08/02/2019 10:49 AM

Received By:

Date Received:

Sample Receipt Checklist

Comments

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by:

Katie Lowe

Date: _____



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 08/01/2019 04:05:00 PM

Work Order #: 632825

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 08/02/2019

Checklist reviewed by:

Jessica Kramer

Date: 08/02/2019

Analytical Report 632991

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda 25 Obs Well# 1

2RP-5309

14-AUG-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

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

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



14-AUG-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **632991**

Remuda 25 Obs Well# 1

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 632991. 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. 632991 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

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 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH12	S	08-02-19 09:30	2 ft	632991-001
PH12A	S	08-02-19 09:45	5 ft	632991-002
PH12B	S	08-02-19 10:00	6 ft	632991-003
PH12C	S	08-02-19 10:05	8 ft	632991-004
PH12D	S	08-02-19 10:40	14 ft	632991-005
PH12E	S	08-02-19 10:50	17.5 ft	632991-006
PH13	S	08-02-19 11:30	1 ft	632991-007
PH13A	S	08-02-19 12:00	4 ft	632991-008
PH14	S	08-02-19 13:05	2 ft	632991-009
PH14A	S	08-02-19 13:15	4 ft	632991-010
PH14B	S	08-02-19 13:25	6 ft	632991-011
PH14C	S	08-02-19 13:30	8 ft	632991-012
PH14D	S	08-02-19 13:40	10 ft	632991-013
PH15	S	08-02-19 14:00	2 ft	632991-014
PH15A	S	08-02-19 14:10	4 ft	632991-015
PH15B	S	08-02-19 14:15	6 ft	632991-016
PH15C	S	08-02-19 14:20	8 ft	632991-017
PH16	S	08-02-19 14:40	1 ft	632991-018
PH16A	S	08-02-19 14:55	4 ft	632991-019

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: Remuda 25 Obs Well# 1**Project ID: 2RP-5309
Work Order Number(s): 632991Report Date: 14-AUG-19
Date Received: 08/05/2019**Sample receipt non conformances and comments:**

Samples received out of temp, client notified and wants to move forward. JK 08/05/19

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3097905 TPH by SW8015 Mod

Lab Sample ID 632991-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Diesel Range Organics (DRO) recovered below QC limits in the Matrix Spike. Gasoline Range Hydrocarbons (GRO) recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 632991-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019.

The Laboratory Control Sample for Gasoline Range Hydrocarbons (GRO), Diesel Range Organics (DRO) is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3098279 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 632991-014, 632991-010, 632991-009, 632991-018, 632991-002, 632991-001.

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

Lab Sample ID 632991-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, Toluene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Benzene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 632991-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019.

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



Certificate of Analysis Summary 632991

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well# 1

Project Id: 2RP-5309

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Aug-05-19 12:04 pm

Report Date: 14-AUG-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	632991-001	632991-002	632991-003	632991-004	632991-005	632991-006
	<i>Field Id:</i>	PH12	PH12A	PH12B	PH12C	PH12D	PH12E
	<i>Depth:</i>	2- ft	5- ft	6- ft	8- ft	14- ft	17.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-02-19 09:30	Aug-02-19 09:45	Aug-02-19 10:00	Aug-02-19 10:05	Aug-02-19 10:40	Aug-02-19 10:50
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Aug-06-19 11:30	Aug-06-19 11:30	Aug-06-19 11:30	Aug-06-19 11:30	Aug-06-19 11:30	Aug-06-19 11:30
	<i>Analyzed:</i>	Aug-09-19 11:59	Aug-10-19 12:19	Aug-10-19 12:39	Aug-10-19 12:59	Aug-10-19 01:19	Aug-10-19 01:39
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		0.653 0.00996	<0.00994 0.00994	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Toluene		9.27 D 0.498	0.858 0.00994	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		1.97 D 0.498	0.265 0.00994	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		29.1 D 0.996	2.75 D 0.199	<0.00398 0.00398	<0.00398 0.00398	<0.00398 0.00398	<0.00399 0.00399
o-Xylene		8.30 D 0.498	0.801 D 0.0994	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		37.4 0.498	3.55 0.0994	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		49.3 0.00996	4.67 0.00994	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Aug-06-19 12:45	Aug-06-19 12:45	Aug-06-19 12:45	Aug-06-19 12:45	Aug-06-19 12:45	Aug-06-19 12:45
	<i>Analyzed:</i>	Aug-06-19 15:47	Aug-06-19 16:04	Aug-06-19 16:09	Aug-06-19 16:15	Aug-06-19 16:20	Aug-06-19 16:26
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		14.0 5.05	15.3 5.00	11.5 4.99	15.4 5.04	19.1 4.97	609 4.95
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Aug-06-19 16:00	Aug-06-19 16:00	Aug-06-19 16:00	Aug-06-19 16:00	Aug-06-19 16:00	Aug-06-19 16:00
	<i>Analyzed:</i>	Aug-07-19 10:01	Aug-07-19 11:12	Aug-07-19 11:35	Aug-07-19 11:58	Aug-07-19 12:22	Aug-07-19 12:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		2300 15.0	161 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	19.3 14.9
Diesel Range Organics (DRO)		3460 15.0	348 15.0	<15.0 15.0	<15.0 15.0	29.9 15.0	90.1 14.9
Motor Oil Range Hydrocarbons (MRO)		104 15.0	22.8 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total TPH		5860 15.0	532 15.0	<15.0 15.0	<15.0 15.0	29.9 15.0	109 14.9
Total GRO-DRO		5760 15.0	509 15.0	<15.0 15.0	<15.0 15.0	29.9 15.0	109 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
Project Assistant



Certificate of Analysis Summary 632991

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well# 1

Project Id: 2RP-5309

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Aug-05-19 12:04 pm

Report Date: 14-AUG-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	632991-007	632991-008	632991-009	632991-010	632991-011	632991-012
	<i>Field Id:</i>	PH13	PH13A	PH14	PH14A	PH14B	PH14C
	<i>Depth:</i>	1- ft	4- ft	2- ft	4- ft	6- ft	8- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-02-19 11:30	Aug-02-19 12:00	Aug-02-19 13:05	Aug-02-19 13:15	Aug-02-19 13:25	Aug-02-19 13:30
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Aug-06-19 11:30	Aug-06-19 11:30	Aug-06-19 11:30	Aug-06-19 11:30	Aug-06-19 11:30	Aug-06-19 11:30
	<i>Analyzed:</i>	Aug-10-19 02:00	Aug-10-19 02:20	Aug-10-19 02:40	Aug-10-19 03:00	Aug-10-19 04:19	Aug-10-19 04:39
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00198 0.00198	0.272 0.00200	0.793 0.00996	<0.00200 0.00200	<0.00198 0.00198
Toluene		<0.00200 0.00200	<0.00198 0.00198	6.46 D 0.200	3.33 D 0.0996	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198	1.59 D 0.200	1.10 D 0.0996	<0.00200 0.00200	<0.00198 0.00198
m,p-Xylenes		<0.00401 0.00401	<0.00397 0.00397	22.5 D 0.400	13.8 D 0.199	<0.00401 0.00401	<0.00397 0.00397
o-Xylene		<0.00200 0.00200	<0.00198 0.00198	6.67 D 0.200	4.14 D 0.0996	<0.00200 0.00200	<0.00198 0.00198
Total Xylenes		<0.00200 0.00200	<0.00198 0.00198	29.2 0.200	17.9 0.0996	<0.00200 0.00200	<0.00198 0.00198
Total BTEX		<0.00200 0.00200	<0.00198 0.00198	37.5 0.00200	23.2 0.00996	<0.00200 0.00200	<0.00198 0.00198
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Aug-06-19 12:45	Aug-06-19 12:45	Aug-06-19 13:00	Aug-06-19 13:00	Aug-06-19 13:00	Aug-06-19 13:00
	<i>Analyzed:</i>	Aug-06-19 16:31	Aug-06-19 16:43	Aug-06-19 15:05	Aug-06-19 15:11	Aug-06-19 15:18	Aug-06-19 15:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		6.07 5.02	<4.98 4.98	2840 24.8	4270 25.2	976 4.98	1450 5.05
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Aug-06-19 16:00	Aug-06-19 16:00	Aug-06-19 16:00	Aug-06-19 16:00	Aug-06-19 16:00	Aug-06-19 16:00
	<i>Analyzed:</i>	Aug-07-19 13:10	Aug-07-19 13:34	Aug-07-19 13:58	Aug-07-19 14:57	Aug-07-19 15:43	Aug-07-19 16:07
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	1360 15.0	1170 14.9	<15.0 15.0	18.1 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	2400 15.0	2180 14.9	<15.0 15.0	74.5 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	81.2 15.0	82.7 14.9	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	3840 15.0	3430 14.9	<15.0 15.0	92.6 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	3760 15.0	3350 14.9	<15.0 15.0	92.6 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
Project Assistant

Certificate of Analysis Summary 632991



LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well# 1

Project Id: 2RP-5309

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Aug-05-19 12:04 pm

Report Date: 14-AUG-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	632991-013	632991-014	632991-015	632991-016	632991-017	632991-018
	<i>Field Id:</i>	PH14D	PH15	PH15A	PH15B	PH15C	PH16
	<i>Depth:</i>	10- ft	2- ft	4- ft	6- ft	8- ft	1- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-02-19 13:40	Aug-02-19 14:00	Aug-02-19 14:10	Aug-02-19 14:15	Aug-02-19 14:20	Aug-02-19 14:40
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Aug-06-19 11:30	Aug-06-19 11:30	Aug-06-19 11:30	Aug-06-19 11:30	Aug-06-19 11:30	Aug-06-19 11:30
	<i>Analyzed:</i>	Aug-10-19 04:59	Aug-10-19 05:19	Aug-10-19 05:40	Aug-10-19 06:00	Aug-10-19 06:20	Aug-10-19 06:40
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	0.532 0.00994	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00200 0.00200	5.73 D 0.199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	1.57 D 0.100
Ethylbenzene		<0.00200 0.00200	1.75 D 0.199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	0.111 0.00200
m,p-Xylenes		<0.00401 0.00401	22.3 D 0.398	<0.00402 0.00402	<0.00401 0.00401	<0.00399 0.00399	12.2 D 0.200
o-Xylene		<0.00200 0.00200	6.43 D 0.199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	3.78 D 0.100
Total Xylenes		<0.00200 0.00200	28.7 0.199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	16.0 0.100
Total BTEX		<0.00200 0.00200	36.7 0.00994	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	17.7 0.00200
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Aug-06-19 13:00	Aug-06-19 13:00	Aug-06-19 13:00	Aug-06-19 13:00	Aug-06-19 13:00	Aug-06-19 13:00
	<i>Analyzed:</i>	Aug-06-19 14:46	Aug-06-19 15:43	Aug-06-19 15:49	Aug-06-19 16:05	Aug-06-19 16:11	Aug-06-19 16:17
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		106 5.00	2560 24.9	2350 25.0	243 5.05	14.8 5.02	3440 25.0
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Aug-06-19 16:00	Aug-06-19 16:00	Aug-06-19 16:00	Aug-06-19 16:00	Aug-06-19 16:00	Aug-06-19 16:00
	<i>Analyzed:</i>	Aug-07-19 16:30	Aug-07-19 16:54	Aug-07-19 17:18	Aug-07-19 17:42	Aug-07-19 18:06	Aug-07-19 18:29
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	1430 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	1170 14.9
Diesel Range Organics (DRO)		<15.0 15.0	2670 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	2890 14.9
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	85.2 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	98.7 14.9
Total TPH		<15.0 15.0	4190 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	4160 14.9
Total GRO-DRO		<15.0 15.0	4100 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	4060 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
Project Assistant



Certificate of Analysis Summary 632991

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well# 1

Project Id: 2RP-5309

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Aug-05-19 12:04 pm

Report Date: 14-AUG-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	632991-019					
	Field Id:	PH16A					
	Depth:	4- ft					
	Matrix:	SOIL					
	Sampled:	Aug-02-19 14:55					
BTEX by EPA 8021B SUB: T104704400-18-16	Extracted:	Aug-06-19 11:30					
	Analyzed:	Aug-10-19 07:00					
	Units/RL:	mg/kg RL					
Benzene		<0.00200 0.00200					
Toluene		<0.00200 0.00200					
Ethylbenzene		<0.00200 0.00200					
m,p-Xylenes		0.0113 0.00400					
o-Xylene		0.00378 0.00200					
Total Xylenes		0.0151 0.00200					
Total BTEX		0.0151 0.00200					
Chloride by EPA 300 SUB: T104704400-18-16	Extracted:	Aug-06-19 13:00					
	Analyzed:	Aug-06-19 16:24					
	Units/RL:	mg/kg RL					
Chloride		481 4.95					
TPH by SW8015 Mod SUB: T104704400-18-16	Extracted:	Aug-06-19 16:00					
	Analyzed:	Aug-07-19 18:53					
	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.

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH12** Matrix: Soil Date Received: 08.05.19 12.04
 Lab Sample Id: 632991-001 Date Collected: 08.02.19 09.30 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.06.19 12.45 Basis: Wet Weight
 Seq Number: 3097648 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.0	5.05	mg/kg	08.06.19 15.47		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.06.19 16.00 Basis: Wet Weight
 Seq Number: 3097905 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	2300	15.0	mg/kg	08.07.19 10.01		1
Diesel Range Organics (DRO)	C10C28DRO	3460	15.0	mg/kg	08.07.19 10.01		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	104	15.0	mg/kg	08.07.19 10.01		1
Total TPH	PHC635	5860	15.0	mg/kg	08.07.19 10.01		1
Total GRO-DRO	PHC628	5760	15.0	mg/kg	08.07.19 10.01		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	08.07.19 10.01	
o-Terphenyl	84-15-1	114	%	70-135	08.07.19 10.01	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH12**
Lab Sample Id: 632991-001

Matrix: Soil
Date Collected: 08.02.19 09.30

Date Received: 08.05.19 12.04
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Prep Method: SW5030B

% Moisture:

Date Prep: 08.06.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.653	0.00996	mg/kg	08.09.19 11.59		5
Toluene	108-88-3	9.27	0.498	mg/kg	08.13.19 03.26	D	250
Ethylbenzene	100-41-4	1.97	0.498	mg/kg	08.13.19 03.26	D	250
m,p-Xylenes	179601-23-1	29.1	0.996	mg/kg	08.13.19 03.26	D	250
o-Xylene	95-47-6	8.30	0.498	mg/kg	08.13.19 03.26	D	250
Total Xylenes	1330-20-7	37.4	0.498	mg/kg	08.13.19 03.26		250
Total BTEX		49.3	0.00996	mg/kg	08.13.19 03.26		250
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	2140	%	70-130	08.09.19 11.59	**	
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.09.19 11.59		



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH12A**
Lab Sample Id: 632991-002

Matrix: Soil
Date Collected: 08.02.19 09.45

Date Received: 08.05.19 12.04
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3097648

Date Prep: 08.06.19 12.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.3	5.00	mg/kg	08.06.19 16.04		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097905

Date Prep: 08.06.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	161	15.0	mg/kg	08.07.19 11.12		1
Diesel Range Organics (DRO)	C10C28DRO	348	15.0	mg/kg	08.07.19 11.12		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	22.8	15.0	mg/kg	08.07.19 11.12		1
Total TPH	PHC635	532	15.0	mg/kg	08.07.19 11.12		1
Total GRO-DRO	PHC628	509	15.0	mg/kg	08.07.19 11.12		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	08.07.19 11.12	
o-Terphenyl	84-15-1	87	%	70-135	08.07.19 11.12	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH12A**
Lab Sample Id: 632991-002

Matrix: Soil
Date Collected: 08.02.19 09.45

Date Received: 08.05.19 12.04
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Date Prep: 08.06.19 11.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00994	0.00994	mg/kg	08.10.19 12.19	U	5
Toluene	108-88-3	0.858	0.00994	mg/kg	08.10.19 12.19		5
Ethylbenzene	100-41-4	0.265	0.00994	mg/kg	08.10.19 12.19		5
m,p-Xylenes	179601-23-1	2.75	0.199	mg/kg	08.13.19 03.46	D	50
o-Xylene	95-47-6	0.801	0.0994	mg/kg	08.13.19 03.46	D	50
Total Xylenes	1330-20-7	3.55	0.0994	mg/kg	08.13.19 03.46		50
Total BTEX		4.67	0.00994	mg/kg	08.13.19 03.46		50
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	560	%	70-130	08.10.19 12.19	**	
1,4-Difluorobenzene	540-36-3	76	%	70-130	08.10.19 12.19		



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH12B**
Lab Sample Id: 632991-003

Matrix: Soil
Date Collected: 08.02.19 10.00

Date Received: 08.05.19 12.04
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3097648

Date Prep: 08.06.19 12.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.5	4.99	mg/kg	08.06.19 16.09		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097905

Date Prep: 08.06.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.07.19 11.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.07.19 11.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.07.19 11.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.07.19 11.35	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.07.19 11.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	08.07.19 11.35	
o-Terphenyl	84-15-1	77	%	70-135	08.07.19 11.35	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH12B**
Lab Sample Id: 632991-003

Matrix: Soil
Date Collected: 08.02.19 10.00

Date Received: 08.05.19 12.04
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Date Prep: 08.06.19 11.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.10.19 12.39	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.10.19 12.39	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.10.19 12.39	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.10.19 12.39	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.10.19 12.39	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.10.19 12.39	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.10.19 12.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	08.10.19 12.39		
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.10.19 12.39		



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH12C**
Lab Sample Id: 632991-004

Matrix: Soil
Date Collected: 08.02.19 10.05

Date Received: 08.05.19 12.04
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3097648

Date Prep: 08.06.19 12.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.4	5.04	mg/kg	08.06.19 16.15		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097905

Date Prep: 08.06.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.07.19 11.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.07.19 11.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.07.19 11.58	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.07.19 11.58	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.07.19 11.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	08.07.19 11.58	
o-Terphenyl	84-15-1	79	%	70-135	08.07.19 11.58	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH12C**
Lab Sample Id: 632991-004

Matrix: Soil
Date Collected: 08.02.19 10.05

Date Received: 08.05.19 12.04
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Prep Method: SW5030B

% Moisture:

Date Prep: 08.06.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.10.19 12.59	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.10.19 12.59	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.10.19 12.59	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.10.19 12.59	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.10.19 12.59	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.10.19 12.59	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.10.19 12.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.10.19 12.59		
4-Bromofluorobenzene	460-00-4	113	%	70-130	08.10.19 12.59		



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH12D**
Lab Sample Id: 632991-005

Matrix: Soil
Date Collected: 08.02.19 10.40

Date Received: 08.05.19 12.04
Sample Depth: 14 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3097648

Date Prep: 08.06.19 12.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19.1	4.97	mg/kg	08.06.19 16.20		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097905

Date Prep: 08.06.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.07.19 12.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	29.9	15.0	mg/kg	08.07.19 12.22		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.07.19 12.22	U	1
Total TPH	PHC635	29.9	15.0	mg/kg	08.07.19 12.22		1
Total GRO-DRO	PHC628	29.9	15.0	mg/kg	08.07.19 12.22		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	08.07.19 12.22	
o-Terphenyl	84-15-1	78	%	70-135	08.07.19 12.22	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH12D**
Lab Sample Id: 632991-005

Matrix: Soil
Date Collected: 08.02.19 10.40

Date Received: 08.05.19 12.04
Sample Depth: 14 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Date Prep: 08.06.19 11.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.10.19 01.19	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.10.19 01.19	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.10.19 01.19	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.10.19 01.19	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.10.19 01.19	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.10.19 01.19	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.10.19 01.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	08.10.19 01.19		
1,4-Difluorobenzene	540-36-3	97	%	70-130	08.10.19 01.19		



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH12E**
Lab Sample Id: 632991-006

Matrix: Soil
Date Collected: 08.02.19 10.50

Date Received: 08.05.19 12.04
Sample Depth: 17.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3097648

Date Prep: 08.06.19 12.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	609	4.95	mg/kg	08.06.19 16.26		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097905

Date Prep: 08.06.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	19.3	14.9	mg/kg	08.07.19 12.46		1
Diesel Range Organics (DRO)	C10C28DRO	90.1	14.9	mg/kg	08.07.19 12.46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	08.07.19 12.46	U	1
Total TPH	PHC635	109	14.9	mg/kg	08.07.19 12.46		1
Total GRO-DRO	PHC628	109	14.9	mg/kg	08.07.19 12.46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	08.07.19 12.46	
o-Terphenyl	84-15-1	84	%	70-135	08.07.19 12.46	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH12E**
Lab Sample Id: 632991-006

Matrix: Soil
Date Collected: 08.02.19 10.50

Date Received: 08.05.19 12.04
Sample Depth: 17.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Prep Method: SW5030B

% Moisture:

Date Prep: 08.06.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.10.19 01.39	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.10.19 01.39	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.10.19 01.39	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.10.19 01.39	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.10.19 01.39	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.10.19 01.39	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.10.19 01.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	70-130	08.10.19 01.39		
4-Bromofluorobenzene	460-00-4	115	%	70-130	08.10.19 01.39		



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH13**
Lab Sample Id: 632991-007

Matrix: Soil
Date Collected: 08.02.19 11.30

Date Received: 08.05.19 12.04
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3097648

Date Prep: 08.06.19 12.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.07	5.02	mg/kg	08.06.19 16.31		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097905

Date Prep: 08.06.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.07.19 13.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.07.19 13.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.07.19 13.10	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.07.19 13.10	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.07.19 13.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	08.07.19 13.10	
o-Terphenyl	84-15-1	83	%	70-135	08.07.19 13.10	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH13**
Lab Sample Id: 632991-007

Matrix: Soil
Date Collected: 08.02.19 11.30

Date Received: 08.05.19 12.04
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Prep Method: SW5030B

% Moisture:

Date Prep: 08.06.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.10.19 02.00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.10.19 02.00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.10.19 02.00	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.10.19 02.00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.10.19 02.00	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.10.19 02.00	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.10.19 02.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	84	%	70-130	08.10.19 02.00		
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.10.19 02.00		



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH13A**
Lab Sample Id: 632991-008

Matrix: Soil
Date Collected: 08.02.19 12.00

Date Received: 08.05.19 12.04
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3097648

Date Prep: 08.06.19 12.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	08.06.19 16.43	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097905

Date Prep: 08.06.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.07.19 13.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.07.19 13.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.07.19 13.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.07.19 13.34	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.07.19 13.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	08.07.19 13.34	
o-Terphenyl	84-15-1	78	%	70-135	08.07.19 13.34	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH13A**
Lab Sample Id: 632991-008

Matrix: Soil
Date Collected: 08.02.19 12.00

Date Received: 08.05.19 12.04
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Date Prep: 08.06.19 11.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.10.19 02.20	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.10.19 02.20	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.10.19 02.20	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.10.19 02.20	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.10.19 02.20	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.10.19 02.20	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.10.19 02.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	08.10.19 02.20		
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.10.19 02.20		



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH14** Matrix: Soil Date Received: 08.05.19 12.04
 Lab Sample Id: 632991-009 Date Collected: 08.02.19 13.05 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.06.19 13.00 Basis: Wet Weight
 Seq Number: 3097703 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2840	24.8	mg/kg	08.06.19 15.05		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.06.19 16.00 Basis: Wet Weight
 Seq Number: 3097905 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	1360	15.0	mg/kg	08.07.19 13.58		1
Diesel Range Organics (DRO)	C10C28DRO	2400	15.0	mg/kg	08.07.19 13.58		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	81.2	15.0	mg/kg	08.07.19 13.58		1
Total TPH	PHC635	3840	15.0	mg/kg	08.07.19 13.58		1
Total GRO-DRO	PHC628	3760	15.0	mg/kg	08.07.19 13.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	08.07.19 13.58	
o-Terphenyl	84-15-1	110	%	70-135	08.07.19 13.58	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH14**
Lab Sample Id: 632991-009

Matrix: Soil
Date Collected: 08.02.19 13.05

Date Received: 08.05.19 12.04
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Prep Method: SW5030B

% Moisture:

Date Prep: 08.06.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.272	0.00200	mg/kg	08.10.19 02.40		1
Toluene	108-88-3	6.46	0.200	mg/kg	08.13.19 04.06	D	100
Ethylbenzene	100-41-4	1.59	0.200	mg/kg	08.13.19 04.06	D	100
m,p-Xylenes	179601-23-1	22.5	0.400	mg/kg	08.13.19 04.06	D	100
o-Xylene	95-47-6	6.67	0.200	mg/kg	08.13.19 04.06	D	100
Total Xylenes	1330-20-7	29.2	0.200	mg/kg	08.13.19 04.06		100
Total BTEX		37.5	0.00200	mg/kg	08.13.19 04.06		100
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	1167	%	70-130	08.10.19 02.40	**	
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.10.19 02.40		



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH14A**
Lab Sample Id: 632991-010

Matrix: Soil
Date Collected: 08.02.19 13.15

Date Received: 08.05.19 12.04
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3097703

Date Prep: 08.06.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4270	25.2	mg/kg	08.06.19 15.11		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097905

Date Prep: 08.06.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	1170	14.9	mg/kg	08.07.19 14.57		1
Diesel Range Organics (DRO)	C10C28DRO	2180	14.9	mg/kg	08.07.19 14.57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	82.7	14.9	mg/kg	08.07.19 14.57		1
Total TPH	PHC635	3430	14.9	mg/kg	08.07.19 14.57		1
Total GRO-DRO	PHC628	3350	14.9	mg/kg	08.07.19 14.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	08.07.19 14.57	
o-Terphenyl	84-15-1	98	%	70-135	08.07.19 14.57	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH14A**
Lab Sample Id: 632991-010

Matrix: Soil
Date Collected: 08.02.19 13.15

Date Received: 08.05.19 12.04
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Date Prep: 08.06.19 11.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.793	0.00996	mg/kg	08.10.19 03.00		5
Toluene	108-88-3	3.33	0.0996	mg/kg	08.13.19 04.26	D	50
Ethylbenzene	100-41-4	1.10	0.0996	mg/kg	08.13.19 04.26	D	50
m,p-Xylenes	179601-23-1	13.8	0.199	mg/kg	08.13.19 04.26	D	50
o-Xylene	95-47-6	4.14	0.0996	mg/kg	08.13.19 04.26	D	50
Total Xylenes	1330-20-7	17.9	0.0996	mg/kg	08.13.19 04.26		50
Total BTEX		23.2	0.00996	mg/kg	08.13.19 04.26		50
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	08.10.19 03.00		
4-Bromofluorobenzene	460-00-4	1990	%	70-130	08.10.19 03.00	**	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH14B**
Lab Sample Id: 632991-011

Matrix: Soil
Date Collected: 08.02.19 13.25

Date Received: 08.05.19 12.04
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3097703

Date Prep: 08.06.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	976	4.98	mg/kg	08.06.19 15.18		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097905

Date Prep: 08.06.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.07.19 15.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.07.19 15.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.07.19 15.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.07.19 15.43	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.07.19 15.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	08.07.19 15.43	
o-Terphenyl	84-15-1	72	%	70-135	08.07.19 15.43	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH14B**
Lab Sample Id: 632991-011

Matrix: Soil
Date Collected: 08.02.19 13.25

Date Received: 08.05.19 12.04
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Date Prep: 08.06.19 11.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.10.19 04.19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.10.19 04.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.10.19 04.19	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.10.19 04.19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.10.19 04.19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.10.19 04.19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.10.19 04.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	08.10.19 04.19		
1,4-Difluorobenzene	540-36-3	95	%	70-130	08.10.19 04.19		



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH14C**
Lab Sample Id: 632991-012

Matrix: Soil
Date Collected: 08.02.19 13.30

Date Received: 08.05.19 12.04
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3097703

Date Prep: 08.06.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1450	5.05	mg/kg	08.06.19 15.24		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097905

Date Prep: 08.06.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	18.1	15.0	mg/kg	08.07.19 16.07		1
Diesel Range Organics (DRO)	C10C28DRO	74.5	15.0	mg/kg	08.07.19 16.07		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.07.19 16.07	U	1
Total TPH	PHC635	92.6	15.0	mg/kg	08.07.19 16.07		1
Total GRO-DRO	PHC628	92.6	15.0	mg/kg	08.07.19 16.07		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	08.07.19 16.07	
o-Terphenyl	84-15-1	77	%	70-135	08.07.19 16.07	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH14C**
Lab Sample Id: 632991-012

Matrix: Soil
Date Collected: 08.02.19 13.30

Date Received: 08.05.19 12.04
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Prep Method: SW5030B

% Moisture:

Date Prep: 08.06.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.10.19 04.39	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.10.19 04.39	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.10.19 04.39	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.10.19 04.39	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.10.19 04.39	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.10.19 04.39	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.10.19 04.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	08.10.19 04.39		
4-Bromofluorobenzene	460-00-4	119	%	70-130	08.10.19 04.39		



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH14D**
Lab Sample Id: 632991-013

Matrix: Soil
Date Collected: 08.02.19 13.40

Date Received: 08.05.19 12.04
Sample Depth: 10 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3097703

Date Prep: 08.06.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	106	5.00	mg/kg	08.06.19 14.46		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097905

Date Prep: 08.06.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.07.19 16.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.07.19 16.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.07.19 16.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.07.19 16.30	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.07.19 16.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	08.07.19 16.30	
o-Terphenyl	84-15-1	79	%	70-135	08.07.19 16.30	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH14D**
Lab Sample Id: 632991-013

Matrix: Soil
Date Collected: 08.02.19 13.40

Date Received: 08.05.19 12.04
Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Prep Method: SW5030B

% Moisture:

Date Prep: 08.06.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.10.19 04.59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.10.19 04.59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.10.19 04.59	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.10.19 04.59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.10.19 04.59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.10.19 04.59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.10.19 04.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.10.19 04.59		
4-Bromofluorobenzene	460-00-4	104	%	70-130	08.10.19 04.59		



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH15**
Lab Sample Id: 632991-014

Matrix: Soil
Date Collected: 08.02.19 14.00

Date Received: 08.05.19 12.04
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3097703

Date Prep: 08.06.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2560	24.9	mg/kg	08.06.19 15.43		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097905

Date Prep: 08.06.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	1430	14.9	mg/kg	08.07.19 16.54		1
Diesel Range Organics (DRO)	C10C28DRO	2670	14.9	mg/kg	08.07.19 16.54		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	85.2	14.9	mg/kg	08.07.19 16.54		1
Total TPH	PHC635	4190	14.9	mg/kg	08.07.19 16.54		1
Total GRO-DRO	PHC628	4100	14.9	mg/kg	08.07.19 16.54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	08.07.19 16.54	
o-Terphenyl	84-15-1	108	%	70-135	08.07.19 16.54	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH15**
Lab Sample Id: 632991-014

Matrix: Soil
Date Collected: 08.02.19 14.00

Date Received: 08.05.19 12.04
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Prep Method: SW5030B

% Moisture:

Date Prep: 08.06.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.532	0.00994	mg/kg	08.10.19 05.19		5
Toluene	108-88-3	5.73	0.199	mg/kg	08.13.19 04.46	D	100
Ethylbenzene	100-41-4	1.75	0.199	mg/kg	08.13.19 04.46	D	100
m,p-Xylenes	179601-23-1	22.3	0.398	mg/kg	08.13.19 04.46	D	100
o-Xylene	95-47-6	6.43	0.199	mg/kg	08.13.19 04.46	D	100
Total Xylenes	1330-20-7	28.7	0.199	mg/kg	08.13.19 04.46		100
Total BTEX		36.7	0.00994	mg/kg	08.13.19 04.46		100
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	1560	%	70-130	08.10.19 05.19	**	
1,4-Difluorobenzene	540-36-3	84	%	70-130	08.10.19 05.19		



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH15A**
Lab Sample Id: 632991-015

Matrix: Soil
Date Collected: 08.02.19 14.10

Date Received: 08.05.19 12.04
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3097703

Date Prep: 08.06.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2350	25.0	mg/kg	08.06.19 15.49		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097905

Date Prep: 08.06.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.07.19 17.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.07.19 17.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.07.19 17.18	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.07.19 17.18	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.07.19 17.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	08.07.19 17.18	
o-Terphenyl	84-15-1	72	%	70-135	08.07.19 17.18	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH15A**
Lab Sample Id: 632991-015

Matrix: Soil
Date Collected: 08.02.19 14.10

Date Received: 08.05.19 12.04
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Date Prep: 08.06.19 11.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.10.19 05.40	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.10.19 05.40	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.10.19 05.40	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.10.19 05.40	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.10.19 05.40	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.10.19 05.40	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.10.19 05.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	70-130	08.10.19 05.40		
4-Bromofluorobenzene	460-00-4	129	%	70-130	08.10.19 05.40		



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH15B**
Lab Sample Id: 632991-016

Matrix: Soil
Date Collected: 08.02.19 14.15

Date Received: 08.05.19 12.04
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3097703

Date Prep: 08.06.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	243	5.05	mg/kg	08.06.19 16.05		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097905

Date Prep: 08.06.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.07.19 17.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.07.19 17.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.07.19 17.42	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.07.19 17.42	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.07.19 17.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	08.07.19 17.42	
o-Terphenyl	84-15-1	83	%	70-135	08.07.19 17.42	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH15B**
Lab Sample Id: 632991-016

Matrix: Soil
Date Collected: 08.02.19 14.15

Date Received: 08.05.19 12.04
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Prep Method: SW5030B

% Moisture:

Date Prep: 08.06.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.10.19 06.00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.10.19 06.00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.10.19 06.00	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.10.19 06.00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.10.19 06.00	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.10.19 06.00	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.10.19 06.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	08.10.19 06.00		
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.10.19 06.00		



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH15C** Matrix: Soil Date Received: 08.05.19 12.04
 Lab Sample Id: 632991-017 Date Collected: 08.02.19 14.20 Sample Depth: 8 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.06.19 13.00 Basis: Wet Weight
 Seq Number: 3097703 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.8	5.02	mg/kg	08.06.19 16.11		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.06.19 16.00 Basis: Wet Weight
 Seq Number: 3097905 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.07.19 18.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.07.19 18.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.07.19 18.06	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.07.19 18.06	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.07.19 18.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	08.07.19 18.06	
o-Terphenyl	84-15-1	80	%	70-135	08.07.19 18.06	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH15C**
Lab Sample Id: 632991-017

Matrix: Soil
Date Collected: 08.02.19 14.20

Date Received: 08.05.19 12.04
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Prep Method: SW5030B

% Moisture:

Date Prep: 08.06.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.10.19 06.20	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.10.19 06.20	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.10.19 06.20	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.10.19 06.20	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.10.19 06.20	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.10.19 06.20	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.10.19 06.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	08.10.19 06.20		
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.10.19 06.20		



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH16**
Lab Sample Id: 632991-018

Matrix: Soil
Date Collected: 08.02.19 14.40

Date Received: 08.05.19 12.04
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3097703

Date Prep: 08.06.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3440	25.0	mg/kg	08.06.19 16.17		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097905

Date Prep: 08.06.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	1170	14.9	mg/kg	08.07.19 18.29		1
Diesel Range Organics (DRO)	C10C28DRO	2890	14.9	mg/kg	08.07.19 18.29		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	98.7	14.9	mg/kg	08.07.19 18.29		1
Total TPH	PHC635	4160	14.9	mg/kg	08.07.19 18.29		1
Total GRO-DRO	PHC628	4060	14.9	mg/kg	08.07.19 18.29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	08.07.19 18.29	
o-Terphenyl	84-15-1	119	%	70-135	08.07.19 18.29	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH16**
Lab Sample Id: 632991-018

Matrix: Soil
Date Collected: 08.02.19 14.40

Date Received: 08.05.19 12.04
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Prep Method: SW5030B

% Moisture:

Date Prep: 08.06.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.10.19 06.40	U	1
Toluene	108-88-3	1.57	0.100	mg/kg	08.13.19 05.06	D	50
Ethylbenzene	100-41-4	0.111	0.00200	mg/kg	08.10.19 06.40		1
m,p-Xylenes	179601-23-1	12.2	0.200	mg/kg	08.13.19 05.06	D	50
o-Xylene	95-47-6	3.78	0.100	mg/kg	08.13.19 05.06	D	50
Total Xylenes	1330-20-7	16.0	0.100	mg/kg	08.13.19 05.06		50
Total BTEX		17.7	0.00200	mg/kg	08.13.19 05.06		50
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	08.10.19 06.40		
4-Bromofluorobenzene	460-00-4	193	%	70-130	08.10.19 06.40	**	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH16A**
Lab Sample Id: 632991-019

Matrix: Soil
Date Collected: 08.02.19 14.55

Date Received: 08.05.19 12.04
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3097703

Date Prep: 08.06.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	481	4.95	mg/kg	08.06.19 16.24		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3097905

Date Prep: 08.06.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.07.19 18.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.07.19 18.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.07.19 18.53	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.07.19 18.53	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.07.19 18.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	08.07.19 18.53	
o-Terphenyl	84-15-1	81	%	70-135	08.07.19 18.53	



Certificate of Analytical Results 632991

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **PH16A**
Lab Sample Id: 632991-019

Matrix: Soil
Date Collected: 08.02.19 14.55

Date Received: 08.05.19 12.04
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098279

Prep Method: SW5030B

% Moisture:

Date Prep: 08.06.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.10.19 07.00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.10.19 07.00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.10.19 07.00	U	1
m,p-Xylenes	179601-23-1	0.0113	0.00400	mg/kg	08.10.19 07.00		1
o-Xylene	95-47-6	0.00378	0.00200	mg/kg	08.10.19 07.00		1
Total Xylenes	1330-20-7	0.0151	0.00200	mg/kg	08.10.19 07.00		1
Total BTEX		0.0151	0.00200	mg/kg	08.10.19 07.00		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.10.19 07.00		
4-Bromofluorobenzene	460-00-4	90	%	70-130	08.10.19 07.00		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 Obs Well# 1

Analytical Method: Chloride by EPA 300

Seq Number: 3097648

MB Sample Id: 7683622-1-BLK

Matrix: Solid

LCS Sample Id: 7683622-1-BKS

Prep Method: E300P

Date Prep: 08.06.19

LCSD Sample Id: 7683622-1-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	264	106	275	110	90-110	4	20	mg/kg	08.06.19 13:56	

Analytical Method: Chloride by EPA 300

Seq Number: 3097703

MB Sample Id: 7683623-1-BLK

Matrix: Solid

LCS Sample Id: 7683623-1-BKS

Prep Method: E300P

Date Prep: 08.06.19

LCSD Sample Id: 7683623-1-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	258	103	252	101	90-110	2	20	mg/kg	08.06.19 14:34	

Analytical Method: Chloride by EPA 300

Seq Number: 3097648

Parent Sample Id: 633109-002

Matrix: Soil

MS Sample Id: 633109-002 S

Prep Method: E300P

Date Prep: 08.06.19

MSD Sample Id: 633109-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	333	248	584	101	585	102	90-110	0	20	mg/kg	08.06.19 14:12	

Analytical Method: Chloride by EPA 300

Seq Number: 3097648

Parent Sample Id: 633109-011

Matrix: Soil

MS Sample Id: 633109-011 S

Prep Method: E300P

Date Prep: 08.06.19

MSD Sample Id: 633109-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1180	250	1420	96	1410	92	90-110	1	20	mg/kg	08.06.19 15:30	

Analytical Method: Chloride by EPA 300

Seq Number: 3097703

Parent Sample Id: 632991-013

Matrix: Soil

MS Sample Id: 632991-013 S

Prep Method: E300P

Date Prep: 08.06.19

MSD Sample Id: 632991-013 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	106	250	364	103	364	103	90-110	0	20	mg/kg	08.06.19 14:52	

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

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

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

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



LT Environmental, Inc.

Remuda 25 Obs Well# 1

Analytical Method: Chloride by EPA 300

Seq Number: 3097703

Parent Sample Id: 632991-019

Matrix: Soil

MS Sample Id: 632991-019 S

Prep Method: E300P

Date Prep: 08.06.19

MSD Sample Id: 632991-019 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	481	248	703	90	704	90	90-110	0	20	mg/kg	08.06.19 16:30	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3097905

MB Sample Id: 7683648-1-BLK

Matrix: Solid

LCS Sample Id: 7683648-1-BKS

Prep Method: TX1005P

Date Prep: 08.06.19

LCSD Sample Id: 7683648-1-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	1100	110	1100	110	70-135	0	20	mg/kg	08.07.19 09:14	
Diesel Range Organics (DRO)	<8.13	1000	1150	115	1180	118	70-135	3	20	mg/kg	08.07.19 09:14	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		94		97		70-135	%	08.07.19 09:14
o-Terphenyl	77		88		95		70-135	%	08.07.19 09:14

Analytical Method: TPH by SW8015 Mod

Seq Number: 3097905

Parent Sample Id: 632991-001

Matrix: Soil

MS Sample Id: 632991-001 S

Prep Method: TX1005P

Date Prep: 08.06.19

MSD Sample Id: 632991-001 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)	2300	997	2700	40	2830	53	70-135	5	20	mg/kg	08.07.19 10:25	X
Diesel Range Organics (DRO)	3460	997	3760	30	4280	82	70-135	13	20	mg/kg	08.07.19 10:25	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	85		91		70-135	%	08.07.19 10:25
o-Terphenyl	102		115		70-135	%	08.07.19 10:25

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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.

Remuda 25 Obs Well# 1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3098279

MB Sample Id: 7683603-1-BLK

Matrix: Solid

LCS Sample Id: 7683603-1-BKS

Prep Method: SW5030B

Date Prep: 08.06.19

LCSD Sample Id: 7683603-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0883	88	0.0928	93	70-130	5	35	mg/kg	08.09.19 09:57	
Toluene	<0.00200	0.100	0.0855	86	0.0891	89	70-130	4	35	mg/kg	08.09.19 09:57	
Ethylbenzene	<0.00200	0.100	0.0961	96	0.0996	100	70-130	4	35	mg/kg	08.09.19 09:57	
m,p-Xylenes	<0.00400	0.200	0.194	97	0.201	101	70-130	4	35	mg/kg	08.09.19 09:57	
o-Xylene	<0.00200	0.100	0.0967	97	0.103	103	70-130	6	35	mg/kg	08.09.19 09:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		99		102		70-130	%	08.09.19 09:57
4-Bromofluorobenzene	98		107		121		70-130	%	08.09.19 09:57

Analytical Method: BTEX by EPA 8021B

Seq Number: 3098279

Parent Sample Id: 632991-004

Matrix: Soil

MS Sample Id: 632991-004 S

Prep Method: SW5030B

Date Prep: 08.06.19

MSD Sample Id: 632991-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0699	70	0.0617	62	70-130	12	35	mg/kg	08.09.19 10:38	X
Toluene	<0.00200	0.100	0.0689	69	0.0666	67	70-130	3	35	mg/kg	08.09.19 10:38	X
Ethylbenzene	<0.00200	0.100	0.0568	57	0.0581	58	70-130	2	35	mg/kg	08.09.19 10:38	X
m,p-Xylenes	<0.00401	0.200	0.157	79	0.163	82	70-130	4	35	mg/kg	08.09.19 10:38	
o-Xylene	<0.00200	0.100	0.0930	93	0.0976	98	70-130	5	35	mg/kg	08.09.19 10:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		99		70-130	%	08.09.19 10:38
4-Bromofluorobenzene	122		126		70-130	%	08.09.19 10:38

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: 103299

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0290 San Antonio, TX (210) 509-3334
 Midland, TX (432) 704-5440 El Paso, TX (915) 586-3443 Lubbock, TX (806) 794-1296
 Hobbs, NM (505) 392-7550 Phoenix, AZ (480) 355-0500 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

www.xenco.com

Page 1 of 2

Project Manager:	Dan Moir	ESL to: (if different)	Kyle Lilbel
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:	dmor@xenco.com mcafee@xenco.com

Project Name:	Permit 25 Dis Well #1	Turn Around	☐
Project Number:		Routine	☐
P.O. Number:	2 RP-5309	Rush:	3 day
Sampler's Name:	Robert McAlfee	Due Date:	

SAMPLE RECEIPT	Temp Blank:	☒ Yes ☐ No	Well loc:	☒ Yes ☐ No
	Temperature (°C):	8.4	Thermometer ID	
	Received Inlet:	☒ Yes ☐ No	Correction Factor:	T-NA-007
	Cooler Custody Seal:	Yes ☒ No ☐ N/A	Total Containers:	19
Sample Custody Seal:	Yes ☐ No ☒ N/A			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8-8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST	Work Order Notes
PH12	S	08/02/19	0950	2'	1	X	X	X		
PH12A			0945	5'		X	X	X		
PH12B			1000	6'		X	X	X		
PH12C			1005	8'		X	X	X		
PH12D			1040	14'		X	X	X		
PH12E			1050	12.5'		X	X	X		
PH13			1130	1'		X	X	X		
PH13A			1200	4'		X	X	X		
PH14			1305	2'		X	X	X		
PH14A			1315	4'		X	X	X		

Total 200.7 / 6010 200.8 / 6020: BRCRA 13PFM 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

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 \$8 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>	8/5/19 12:04			



Chain of Custody

Work Order No: 1032991

Houston, TX (281) 240-4200 Dallas, TX (214) 902-6300 San Antonio, TX (210) 500-3334
 Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1286

Hobbs, NM (505) 382-7550 Phoenix, AZ (480) 356-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

www.xenco.com

Page 2 of 2

Project Manager:	Dan Molt	Bill to (if different):	Kyle Litvick
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:	dimor@xenco.com rmcrafee@xenco.com
Project Name:	Frack 25 obs well #1	Turn Around:	
Project Number:		Routine:	☐
P.O. Number:	2 RP - 5309	Rush:	3 days
Sampler's Name:	Robert McVee	Due Date:	

SAMPLE RECEIPT				ANALYSIS REQUEST										Work Order Notes		
Temperature (°C):	Temp Blank:	Yes	No	Wet Ice:	Yes	No										
Received Inlet:	Yes	No		Thermometer ID:												
Cooler Custody Seals:	Yes	No	N/A	Correction Factor:												
Sample Custody Seals:	Yes	No	N/A	Total Containers:												
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8-021)	Chloride (EPA 300.0)								
PH1B	S	08/02/14	1325	6'	1	X	X	X								
PH1C			1330	8'		X	X	X								
PH1D			1340	10'		X	X	X								
PH1S			1400	2'		X	X	X								
PH1SA			1410	4'		X	X	X								
PH1SB			1415	6'		X	X	X								
PH1SC			1420	8'		X	X	X								
PH1E			1440	1'		X	X	X								
PH1EA			1455	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 S/O2 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

Notes: Signature of this document and relinquishment of sample 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 at each loss 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 McVee</i>	<i>Robert McVee</i>	8/5/14 12:04			



Inter-Office Shipment

Page 1 of 3

IOS Number **45565**

Date/Time: 08/05/19 13:22

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 788928066925

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
632991-001	S	PH12	08/02/19 09:30	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-001	S	PH12	08/02/19 09:30	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	
632991-001	S	PH12	08/02/19 09:30	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-002	S	PH12A	08/02/19 09:45	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-002	S	PH12A	08/02/19 09:45	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	
632991-002	S	PH12A	08/02/19 09:45	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-003	S	PH12B	08/02/19 10:00	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-003	S	PH12B	08/02/19 10:00	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	
632991-003	S	PH12B	08/02/19 10:00	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-004	S	PH12C	08/02/19 10:05	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-004	S	PH12C	08/02/19 10:05	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-004	S	PH12C	08/02/19 10:05	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	
632991-005	S	PH12D	08/02/19 10:40	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-005	S	PH12D	08/02/19 10:40	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	
632991-005	S	PH12D	08/02/19 10:40	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-006	S	PH12E	08/02/19 10:50	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-006	S	PH12E	08/02/19 10:50	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-006	S	PH12E	08/02/19 10:50	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	
632991-007	S	PH13	08/02/19 11:30	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-007	S	PH13	08/02/19 11:30	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-007	S	PH13	08/02/19 11:30	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	
632991-008	S	PH13A	08/02/19 12:00	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-008	S	PH13A	08/02/19 12:00	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	
632991-008	S	PH13A	08/02/19 12:00	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-009	S	PH14	08/02/19 13:05	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	



Inter-Office Shipment

Page 2 of 3

IOS Number **45565**

Date/Time: 08/05/19 13:22

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 788928066925

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
632991-009	S	PH14	08/02/19 13:05	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-009	S	PH14	08/02/19 13:05	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-010	S	PH14A	08/02/19 13:15	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-010	S	PH14A	08/02/19 13:15	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-010	S	PH14A	08/02/19 13:15	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	
632991-011	S	PH14B	08/02/19 13:25	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-011	S	PH14B	08/02/19 13:25	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	
632991-011	S	PH14B	08/02/19 13:25	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-012	S	PH14C	08/02/19 13:30	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	
632991-012	S	PH14C	08/02/19 13:30	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-012	S	PH14C	08/02/19 13:30	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-013	S	PH14D	08/02/19 13:40	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	
632991-013	S	PH14D	08/02/19 13:40	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-013	S	PH14D	08/02/19 13:40	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-014	S	PH15	08/02/19 14:00	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	
632991-014	S	PH15	08/02/19 14:00	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-014	S	PH15	08/02/19 14:00	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-015	S	PH15A	08/02/19 14:10	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-015	S	PH15A	08/02/19 14:10	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	
632991-015	S	PH15A	08/02/19 14:10	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-016	S	PH15B	08/02/19 14:15	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-016	S	PH15B	08/02/19 14:15	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-016	S	PH15B	08/02/19 14:15	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	
632991-017	S	PH15C	08/02/19 14:20	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-017	S	PH15C	08/02/19 14:20	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	

Inter Office Shipment or Sample Comments:



Inter-Office Shipment

Page 3 of 3

IOS Number **45565**

Date/Time: 08/05/19 13:22

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 788928066925

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
632991-017	S	PH15C	08/02/19 14:20	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	
632991-018	S	PH16	08/02/19 14:40	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	
632991-018	S	PH16	08/02/19 14:40	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-018	S	PH16	08/02/19 14:40	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-019	S	PH16A	08/02/19 14:55	E300_CL	Chloride by EPA 300	08/07/19	01/29/20	JKR	CL	
632991-019	S	PH16A	08/02/19 14:55	SW8015MOD_NM	TPH by SW8015 Mod	08/07/19	08/16/19	JKR	GRO-DRO PHCC10C28 PF	
632991-019	S	PH16A	08/02/19 14:55	SW8021B	BTEX by EPA 8021B	08/07/19	08/16/19	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Relinquished By:

Date Relinquished:

Elizabeth McClellan

08/05/2019

Received By:

Brianna Teel

Date Received:

08/06/2019 11:05

Cooler Temperature:

0.5



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 45565

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 08/05/2019 01:22 PM

Received By: Brianna Teel

Date Received: 08/06/2019 11:05 AM

Sample Receipt Checklist

Comments

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: 08/06/2019



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 08/05/2019 12:04:00 PM

Work Order #: 632991

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	8.4	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	Additional cooling process began in lab after receipt and processing of samples.
#4 *Custody Seals intact on shipping container/ cooler?	No	
#5 Custody Seals intact on sample bottles?	No	
#6 *Custody Seals Signed and dated?	N/A	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	Yes	Subbed to Xenco Midland.
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 08/05/2019

Checklist reviewed by:

Jessica Kramer

Date: 08/05/2019

Analytical Report 633262

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda 25 Obs Well

2RP-5309

13-AUG-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

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

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



13-AUG-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **633262**

Remuda 25 Obs Well

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 633262. 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. 633262 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

**Sample Cross Reference 633262****LT Environmental, Inc., Arvada, CO**

Remuda 25 Obs Well

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS07	S	08-06-19 12:45	3 ft	633262-001
FS08	S	08-06-19 12:55	3 ft	633262-002
FS09	S	08-06-19 13:50	2 ft	633262-003



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 25 Obs Well

Project ID: 2RP-5309
Work Order Number(s): 633262

Report Date: 13-AUG-19
Date Received: 08/06/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3098311 BTEX by EPA 8021B

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



Certificate of Analysis Summary 633262

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well

Project Id: 2RP-5309

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Aug-06-19 04:00 pm

Report Date: 13-AUG-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	633262-001	633262-002	633262-003			
	<i>Field Id:</i>	FS07	FS08	FS09			
	<i>Depth:</i>	3- ft	3- ft	2- ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Aug-06-19 12:45	Aug-06-19 12:55	Aug-06-19 13:50			
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Aug-09-19 10:30	Aug-09-19 10:30	Aug-09-19 10:30			
	<i>Analyzed:</i>	Aug-11-19 10:59	Aug-11-19 11:19	Aug-11-19 11:39			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198			
Toluene		<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198			
Ethylbenzene		<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198			
m,p-Xylenes		<0.00398 0.00398	<0.00396 0.00396	<0.00396 0.00396			
o-Xylene		<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198			
Total Xylenes		<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198			
Total BTEX		<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198			
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Aug-08-19 14:40	Aug-08-19 14:40	Aug-08-19 14:40			
	<i>Analyzed:</i>	Aug-09-19 10:18	Aug-09-19 10:37	Aug-09-19 10:43			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		323 50.0	1060 4.98	46.4 5.05			
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Aug-08-19 14:00	Aug-08-19 14:00	Aug-08-19 14:00			
	<i>Analyzed:</i>	Aug-12-19 15:42	Aug-12-19 16:39	Aug-12-19 16:59			
	<i>Units/RL:</i>	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)		48.3 15.0	47.9 15.0	25.5 15.0			
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Total TPH		48.3 15.0	47.9 15.0	25.5 15.0			
Total GRO-DRO		48.3 15.0	47.9 15.0	25.5 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
Project Assistant



Certificate of Analytical Results 633262

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well

Sample Id: **FS07** Matrix: Soil Date Received: 08.06.19 16.00
 Lab Sample Id: 633262-001 Date Collected: 08.06.19 12.45 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.08.19 14.40 Basis: Wet Weight
 Seq Number: 3098080 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	323	50.0	mg/kg	08.09.19 10.18		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.08.19 14.00 Basis: Wet Weight
 Seq Number: 3098275 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.12.19 15.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	48.3	15.0	mg/kg	08.12.19 15.42		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.12.19 15.42	U	1
Total TPH	PHC635	48.3	15.0	mg/kg	08.12.19 15.42		1
Total GRO-DRO	PHC628	48.3	15.0	mg/kg	08.12.19 15.42		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	08.12.19 15.42	
o-Terphenyl	84-15-1	90	%	70-135	08.12.19 15.42	



Certificate of Analytical Results 633262

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well

Sample Id: **FS07**
Lab Sample Id: 633262-001

Matrix: Soil
Date Collected: 08.06.19 12.45

Date Received: 08.06.19 16.00
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098311

Prep Method: SW5030B

% Moisture:

Date Prep: 08.09.19 10.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.11.19 10.59	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.11.19 10.59	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.11.19 10.59	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.11.19 10.59	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.11.19 10.59	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.11.19 10.59	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.11.19 10.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.11.19 10.59		
4-Bromofluorobenzene	460-00-4	102	%	70-130	08.11.19 10.59		



Certificate of Analytical Results 633262

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well

Sample Id: **FS08** Matrix: Soil Date Received: 08.06.19 16.00
 Lab Sample Id: 633262-002 Date Collected: 08.06.19 12.55 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.08.19 14.40 Basis: Wet Weight
 Seq Number: 3098080 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1060	4.98	mg/kg	08.09.19 10.37		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.08.19 14.00 Basis: Wet Weight
 Seq Number: 3098275 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.12.19 16.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	47.9	15.0	mg/kg	08.12.19 16.39		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.12.19 16.39	U	1
Total TPH	PHC635	47.9	15.0	mg/kg	08.12.19 16.39		1
Total GRO-DRO	PHC628	47.9	15.0	mg/kg	08.12.19 16.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	08.12.19 16.39	
o-Terphenyl	84-15-1	89	%	70-135	08.12.19 16.39	



Certificate of Analytical Results 633262

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well

Sample Id: **FS08**
Lab Sample Id: 633262-002

Matrix: Soil
Date Collected: 08.06.19 12.55

Date Received: 08.06.19 16.00
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098311

Prep Method: SW5030B

% Moisture:

Date Prep: 08.09.19 10.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.11.19 11.19	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.11.19 11.19	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.11.19 11.19	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	08.11.19 11.19	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.11.19 11.19	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.11.19 11.19	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.11.19 11.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	08.11.19 11.19		
4-Bromofluorobenzene	460-00-4	116	%	70-130	08.11.19 11.19		



Certificate of Analytical Results 633262

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well

Sample Id: **FS09** Matrix: Soil Date Received: 08.06.19 16.00
 Lab Sample Id: 633262-003 Date Collected: 08.06.19 13.50 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.08.19 14.40 Basis: Wet Weight
 Seq Number: 3098080 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	46.4	5.05	mg/kg	08.09.19 10.43		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.08.19 14.00 Basis: Wet Weight
 Seq Number: 3098275 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.12.19 16.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	25.5	15.0	mg/kg	08.12.19 16.59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.12.19 16.59	U	1
Total TPH	PHC635	25.5	15.0	mg/kg	08.12.19 16.59		1
Total GRO-DRO	PHC628	25.5	15.0	mg/kg	08.12.19 16.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	08.12.19 16.59	
o-Terphenyl	84-15-1	95	%	70-135	08.12.19 16.59	



Certificate of Analytical Results 633262

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well

Sample Id: **FS09**
Lab Sample Id: 633262-003

Matrix: Soil
Date Collected: 08.06.19 13.50

Date Received: 08.06.19 16.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098311

Date Prep: 08.09.19 10.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.11.19 11.39	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.11.19 11.39	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.11.19 11.39	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	08.11.19 11.39	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.11.19 11.39	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.11.19 11.39	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.11.19 11.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	08.11.19 11.39		
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.11.19 11.39		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 Obs Well

Analytical Method: Chloride by EPA 300

Seq Number: 3098080

MB Sample Id: 7683802-1-BLK

Matrix: Solid

LCS Sample Id: 7683802-1-BKS

Prep Method: E300P

Date Prep: 08.08.19

LCSD Sample Id: 7683802-1-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	261	104	261	104	90-110	0	20	mg/kg	08.09.19 08:12	

Analytical Method: Chloride by EPA 300

Seq Number: 3098080

Parent Sample Id: 633244-003

Matrix: Soil

MS Sample Id: 633244-003 S

Prep Method: E300P

Date Prep: 08.08.19

MSD Sample Id: 633244-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10.2	250	267	103	267	103	90-110	0	20	mg/kg	08.09.19 09:59	

Analytical Method: Chloride by EPA 300

Seq Number: 3098080

Parent Sample Id: 633426-001

Matrix: Sludge

MS Sample Id: 633426-001 S

Prep Method: E300P

Date Prep: 08.08.19

MSD Sample Id: 633426-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	198	253	456	102	456	102	90-110	0	20	mg/kg	08.09.19 08:31	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3098275

MB Sample Id: 7683831-1-BLK

Matrix: Solid

LCS Sample Id: 7683831-1-BKS

Prep Method: TX1005P

Date Prep: 08.08.19

LCSD Sample Id: 7683831-1-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	989	99	1020	102	70-135	3	20	mg/kg	08.12.19 15:04	
Diesel Range Organics (DRO)	<8.13	1000	985	99	963	96	70-135	2	20	mg/kg	08.12.19 15:04	

Surrogate

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		114		114		70-135	%	08.12.19 15:04
o-Terphenyl	98		99		99		70-135	%	08.12.19 15:04

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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.

Remuda 25 Obs Well

Analytical Method: TPH by SW8015 Mod

Seq Number: 3098275

Parent Sample Id: 633262-001

Matrix: Soil

MS Sample Id: 633262-001 S

Prep Method: TX1005P

Date Prep: 08.08.19

MSD Sample Id: 633262-001 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)	<7.98	997	1100	110	1160	116	70-135	5	20	mg/kg	08.12.19 16:01	
Diesel Range Organics (DRO)	48.3	997	1130	108	1130	109	70-135	0	20	mg/kg	08.12.19 16:01	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		122		70-135	%	08.12.19 16:01
o-Terphenyl	100		104		70-135	%	08.12.19 16:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3098311

MB Sample Id: 7683893-1-BLK

Matrix: Solid

LCS Sample Id: 7683893-1-BKS

Prep Method: SW5030B

Date Prep: 08.09.19

LCSD Sample Id: 7683893-1-BSO

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	0.0884	88	0.103	103	70-130	15	35	mg/kg	08.11.19 04:40	
Toluene	0.000620	0.100	0.0835	84	0.0957	96	70-130	14	35	mg/kg	08.11.19 04:40	
Ethylbenzene	<0.00200	0.100	0.0836	84	0.0951	95	70-130	13	35	mg/kg	08.11.19 04:40	
m,p-Xylenes	<0.00101	0.200	0.166	83	0.189	95	70-130	13	35	mg/kg	08.11.19 04:40	
o-Xylene	<0.000344	0.100	0.0876	88	0.100	100	70-130	13	35	mg/kg	08.11.19 04:40	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		99		101		70-130	%	08.11.19 04:40
4-Bromofluorobenzene	107		103		109		70-130	%	08.11.19 04:40

Analytical Method: BTEX by EPA 8021B

Seq Number: 3098311

Parent Sample Id: 633355-036

Matrix: Soil

MS Sample Id: 633355-036 S

Prep Method: SW5030B

Date Prep: 08.09.19

MSD Sample Id: 633355-036 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	0.0610	61	0.0756	76	70-130	21	35	mg/kg	08.11.19 05:20	X
Toluene	<0.00199	0.0996	0.0536	54	0.0585	59	70-130	9	35	mg/kg	08.11.19 05:20	X
Ethylbenzene	<0.00199	0.0996	0.0534	54	0.0636	64	70-130	17	35	mg/kg	08.11.19 05:20	X
m,p-Xylenes	<0.00398	0.199	0.0825	41	0.0700	35	70-130	16	35	mg/kg	08.11.19 05:20	X
o-Xylene	<0.00199	0.0996	0.0605	61	0.0713	72	70-130	16	35	mg/kg	08.11.19 05:20	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		102		70-130	%	08.11.19 05:20
4-Bromofluorobenzene	114		109		70-130	%	08.11.19 05:20

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

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 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: 1633261

1633261
02/17/20

Houston, TX (281) 240-4200 Dallas, TX (214) 502-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432) 704-5460 El Paso, TX (915) 585-5443 Lubbock, TX (806) 794-1296
 Hobbs, NM (575) 392-7550 Phoenix, AZ (480) 355-0500 Atlanta, GA (770) 448-8800 Tampa, FL (813) 820-2000

www.xenco.com

Page 1 of 1

Project Manager:	Dan McKit	Bill to: (if different)	Kyle Lefel
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:	dmcmckit@xenco.com mcmckit@xenco.com
Project Name:	Remedial 25 Old Well	Turn Around:	
Project Number:		Routine:	☒
P.O. Number:	2RP-5309	Rush:	5 day
Sampler's Name:	Robert McKit	Due Date:	

SAMPLE RECEIPT		Temp Blank:	☒ Yes ☒ No	Wet log:	☒ Yes ☒ No
Temperature (°C):	2.2	Thermometer ID:	T-NM-001		
Received In tact:	☒ Yes ☒ No	Correction Factor:	-0.2		
Cooler Custody Seals:	☒ Yes ☒ No	Total Containers:	3		
Sample Custody Seals:	☒ Yes ☒ No				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)											Sample Comments					
F507	S	08/05/19	1245	3'	1	X	X	X											Composite ↑					
F508	S		1255	3'	1	X	X	X																
F509	S		1350	2'	1	X	X	X																
															[Signature]									

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13P-PM 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 / 7474 : Hg

Use: 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>[Signature]</i>	<i>[Signature]</i>	8/19/19 10:00			



Inter-Office Shipment

Page 1 of 1

IOS Number **45743**

Date/Time: 08/07/19 10:49

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 7759305855567

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
633262-001	S	FS07	08/06/19 12:45	SW8021B	BTEX by EPA 8021B	08/12/19	08/20/19	JKR	BR4FBZ BZ BZME EBZ X	
633262-001	S	FS07	08/06/19 12:45	SW8015MOD_NM	TPH by SW8015 Mod	08/12/19	08/20/19	JKR	GRO-DRO PHCC10C28 PF	
633262-001	S	FS07	08/06/19 12:45	E300_CL	Chloride by EPA 300	08/12/19	02/02/20	JKR	CL	
633262-002	S	FS08	08/06/19 12:55	SW8015MOD_NM	TPH by SW8015 Mod	08/12/19	08/20/19	JKR	GRO-DRO PHCC10C28 PF	
633262-002	S	FS08	08/06/19 12:55	SW8021B	BTEX by EPA 8021B	08/12/19	08/20/19	JKR	BR4FBZ BZ BZME EBZ X	
633262-002	S	FS08	08/06/19 12:55	E300_CL	Chloride by EPA 300	08/12/19	02/02/20	JKR	CL	
633262-003	S	FS09	08/06/19 13:50	SW8015MOD_NM	TPH by SW8015 Mod	08/12/19	08/20/19	JKR	GRO-DRO PHCC10C28 PF	
633262-003	S	FS09	08/06/19 13:50	SW8021B	BTEX by EPA 8021B	08/12/19	08/20/19	JKR	BR4FBZ BZ BZME EBZ X	
633262-003	S	FS09	08/06/19 13:50	E300_CL	Chloride by EPA 300	08/12/19	02/02/20	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By:

Elizabeth McClellan

Date Relinquished: 08/07/2019

Received By:

Brianna Teel

Date Received: 08/08/2019 11:05

Cooler Temperature: 0.5



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 45743

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 08/07/2019 10:49 AM

Received By: Brianna Teel

Date Received: 08/08/2019 11:05 AM

Sample Receipt Checklist

Comments

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by:

Brianna Teel

Date: 08/08/2019



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 08/06/2019 04:00:00 PM

Work Order #: 633262

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.2	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	No	
#4 *Custody Seals intact on shipping container/ cooler?	No	
#5 Custody Seals intact on sample bottles?	N/A	
#6 *Custody Seals Signed and dated?	Yes	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	Yes	Subbed to Xenco Midland.
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 08/07/2019

Checklist reviewed by:

Kalei Stout

Date: 08/08/2019

Analytical Report 633624

for
LT Environmental, Inc.

Project Manager: Dan Moir
Remuda 25 Observation Well #001

012919039

16-AUG-19

Collected By: Client



1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

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

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



16-AUG-19

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

Reference: XENCO Report No(s): **633624**
Remuda 25 Observation Well #001
Project Address: Rural Eddy County

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 633624. 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. 633624 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer
Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

**Sample Cross Reference 633624****LT Environmental, Inc., Arvada, CO**

Remuda 25 Observation Well #001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS10	S	08-07-19 13:30	2.5 ft	633624-001
FS11	S	08-07-19 13:35	4 ft	633624-002
FS12	S	08-08-19 10:50	1 ft	633624-003
FS13	S	08-08-19 11:00	4 ft	633624-004
FS14	S	08-08-19 11:10	4 ft	633624-005
FS15	S	08-08-19 11:20	4 ft	633624-006



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 25 Observation Well #001

Project ID: 012919039
Work Order Number(s): 633624

Report Date: 16-AUG-19
Date Received: 08/09/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3098608 BTEX by EPA 8021B

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



Certificate of Analysis Summary 633624

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Observation Well #001

Project Id: 012919039

Contact: Dan Moir

Project Location: Rural Eddy County

Date Received in Lab: Fri Aug-09-19 01:00 pm

Report Date: 16-AUG-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	633624-001	633624-002	633624-003	633624-004	633624-005	633624-006
	<i>Field Id:</i>	FS10	FS11	FS12	FS13	FS14	FS15
	<i>Depth:</i>	2.5- ft	4- ft	1- ft	4- ft	4- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-07-19 13:30	Aug-07-19 13:35	Aug-08-19 10:50	Aug-08-19 11:00	Aug-08-19 11:10	Aug-08-19 11:20
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Aug-12-19 13:00	Aug-12-19 13:00	Aug-12-19 13:00	Aug-12-19 13:00	Aug-12-19 13:00	Aug-12-19 13:00
	<i>Analyzed:</i>	Aug-14-19 02:14	Aug-14-19 02:34	Aug-14-19 02:54	Aug-14-19 04:12	Aug-14-19 04:32	Aug-14-19 04:52
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Aug-12-19 12:40	Aug-12-19 12:40	Aug-12-19 12:40	Aug-12-19 12:40	Aug-12-19 12:40	Aug-12-19 12:40
	<i>Analyzed:</i>	Aug-12-19 15:59	Aug-12-19 16:06	Aug-12-19 16:12	Aug-12-19 16:18	Aug-12-19 16:25	Aug-12-19 16:31
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		502 5.03	941 4.96	214 5.02	181 4.98	247 4.99	1070 5.04
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Aug-12-19 12:00	Aug-12-19 12:00	Aug-12-19 12:00	Aug-12-19 12:00	Aug-12-19 12:00	Aug-12-19 12:00
	<i>Analyzed:</i>	Aug-13-19 02:07	Aug-13-19 02:25	Aug-13-19 02:44	Aug-13-19 03:03	Aug-13-19 03:22	Aug-13-19 03:40
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	29.4 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	485 15.0	<15.0 15.0	<15.0 15.0	23.1 14.9
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	30.5 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total TPH		<15.0 15.0	<15.0 15.0	545 15.0	<15.0 15.0	<15.0 15.0	23.1 14.9
Total GRO-DRO		<15.0 15.0	<15.0 15.0	514 15.0	<15.0 15.0	<15.0 15.0	23.1 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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 633624

LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #001

Sample Id: **FS10** Matrix: Soil Date Received: 08.09.19 13.00
 Lab Sample Id: 633624-001 Date Collected: 08.07.19 13.30 Sample Depth: 2.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.12.19 12.40 Basis: Wet Weight
 Seq Number: 3098345 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	502	5.03	mg/kg	08.12.19 15.59		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.12.19 12.00 Basis: Wet Weight
 Seq Number: 3098276 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.13.19 02.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.13.19 02.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.13.19 02.07	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.13.19 02.07	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.13.19 02.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	08.13.19 02.07	
o-Terphenyl	84-15-1	103	%	70-135	08.13.19 02.07	



Certificate of Analytical Results 633624

LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #001

Sample Id: **FS10**
Lab Sample Id: 633624-001

Matrix: Soil
Date Collected: 08.07.19 13.30

Date Received: 08.09.19 13.00
Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098608

Prep Method: SW5030B

% Moisture:

Date Prep: 08.12.19 13.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.15.19 22.54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.15.19 22.54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.15.19 22.54	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.15.19 22.54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.15.19 22.54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.15.19 22.54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.15.19 22.54	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		106	%	70-130	08.14.19 02.14	
1,4-Difluorobenzene	540-36-3		93	%	70-130	08.14.19 02.14	



Certificate of Analytical Results 633624

LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #001

Sample Id: **FS11** Matrix: Soil Date Received: 08.09.19 13.00
 Lab Sample Id: 633624-002 Date Collected: 08.07.19 13.35 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.12.19 12.40 Basis: Wet Weight
 Seq Number: 3098345 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	941	4.96	mg/kg	08.12.19 16.06		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.12.19 12.00 Basis: Wet Weight
 Seq Number: 3098276 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.13.19 02.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.13.19 02.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.13.19 02.25	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.13.19 02.25	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.13.19 02.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	08.13.19 02.25	
o-Terphenyl	84-15-1	100	%	70-135	08.13.19 02.25	



Certificate of Analytical Results 633624

LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #001

Sample Id: **FS11**
Lab Sample Id: 633624-002

Matrix: Soil
Date Collected: 08.07.19 13.35

Date Received: 08.09.19 13.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098608

Prep Method: SW5030B

% Moisture:

Date Prep: 08.12.19 13.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.15.19 23.14	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.15.19 23.14	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.15.19 23.14	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.15.19 23.14	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.15.19 23.14	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.15.19 23.14	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.15.19 23.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	08.14.19 02.34		
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.14.19 02.34		



Certificate of Analytical Results 633624

LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #001

Sample Id: **FS12** Matrix: Soil Date Received: 08.09.19 13.00
 Lab Sample Id: 633624-003 Date Collected: 08.08.19 10.50 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.12.19 12.40 Basis: Wet Weight
 Seq Number: 3098345 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	214	5.02	mg/kg	08.12.19 16.12		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.12.19 12.00 Basis: Wet Weight
 Seq Number: 3098276 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	29.4	15.0	mg/kg	08.13.19 02.44		1
Diesel Range Organics (DRO)	C10C28DRO	485	15.0	mg/kg	08.13.19 02.44		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	30.5	15.0	mg/kg	08.13.19 02.44		1
Total TPH	PHC635	545	15.0	mg/kg	08.13.19 02.44		1
Total GRO-DRO	PHC628	514	15.0	mg/kg	08.13.19 02.44		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	08.13.19 02.44	
o-Terphenyl	84-15-1	113	%	70-135	08.13.19 02.44	



Certificate of Analytical Results 633624

LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #001

Sample Id: **FS12**
Lab Sample Id: 633624-003

Matrix: Soil
Date Collected: 08.08.19 10.50

Date Received: 08.09.19 13.00
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098608

Prep Method: SW5030B

% Moisture:

Date Prep: 08.12.19 13.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.15.19 23.34	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.15.19 23.34	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.15.19 23.34	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.15.19 23.34	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.15.19 23.34	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.15.19 23.34	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.15.19 23.34	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		128	%	70-130	08.14.19 02.54	
1,4-Difluorobenzene	540-36-3		85	%	70-130	08.14.19 02.54	



Certificate of Analytical Results 633624

LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #001

Sample Id: **FS13**
Lab Sample Id: 633624-004

Matrix: Soil
Date Collected: 08.08.19 11.00

Date Received: 08.09.19 13.00
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098345

Date Prep: 08.12.19 12.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	181	4.98	mg/kg	08.12.19 16.18		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098276

Date Prep: 08.12.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.13.19 03.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.13.19 03.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.13.19 03.03	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.13.19 03.03	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.13.19 03.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	08.13.19 03.03	
o-Terphenyl	84-15-1	101	%	70-135	08.13.19 03.03	



Certificate of Analytical Results 633624

LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #001

Sample Id: **FS13**
Lab Sample Id: 633624-004

Matrix: Soil
Date Collected: 08.08.19 11.00

Date Received: 08.09.19 13.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098608

Prep Method: SW5030B

% Moisture:

Date Prep: 08.12.19 13.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.14.19 04.12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.14.19 04.12	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.14.19 04.12	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.14.19 04.12	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.14.19 04.12	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.14.19 04.12	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.14.19 04.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	08.14.19 04.12		
1,4-Difluorobenzene	540-36-3	98	%	70-130	08.14.19 04.12		



Certificate of Analytical Results 633624

LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #001

Sample Id: **FS14**
Lab Sample Id: 633624-005

Matrix: Soil
Date Collected: 08.08.19 11.10

Date Received: 08.09.19 13.00
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098345

Date Prep: 08.12.19 12.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	247	4.99	mg/kg	08.12.19 16.25		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098276

Date Prep: 08.12.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.13.19 03.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.13.19 03.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.13.19 03.22	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.13.19 03.22	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	08.13.19 03.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	08.13.19 03.22	
o-Terphenyl	84-15-1	96	%	70-135	08.13.19 03.22	



Certificate of Analytical Results 633624

LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #001

Sample Id: **FS14**
Lab Sample Id: 633624-005

Matrix: Soil
Date Collected: 08.08.19 11.10

Date Received: 08.09.19 13.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098608

Prep Method: SW5030B

% Moisture:

Date Prep: 08.12.19 13.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.14.19 04.32	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.14.19 04.32	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.14.19 04.32	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.14.19 04.32	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.14.19 04.32	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.14.19 04.32	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.14.19 04.32	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		120	%	70-130	08.14.19 04.32	
1,4-Difluorobenzene	540-36-3		94	%	70-130	08.14.19 04.32	



Certificate of Analytical Results 633624

LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #001

Sample Id: **FS15**
Lab Sample Id: 633624-006

Matrix: Soil
Date Collected: 08.08.19 11.20

Date Received: 08.09.19 13.00
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098345

Date Prep: 08.12.19 12.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1070	5.04	mg/kg	08.12.19 16.31		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098276

Date Prep: 08.12.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.13.19 03.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	23.1	14.9	mg/kg	08.13.19 03.40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	08.13.19 03.40	U	1
Total TPH	PHC635	23.1	14.9	mg/kg	08.13.19 03.40		1
Total GRO-DRO	PHC628	23.1	14.9	mg/kg	08.13.19 03.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	08.13.19 03.40	
o-Terphenyl	84-15-1	103	%	70-135	08.13.19 03.40	



Certificate of Analytical Results 633624

LT Environmental, Inc., Arvada, CO

Remuda 25 Observation Well #001

Sample Id: **FS15**
Lab Sample Id: 633624-006

Matrix: Soil
Date Collected: 08.08.19 11.20

Date Received: 08.09.19 13.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: ALG

Seq Number: 3098608

Prep Method: SW5030B

% Moisture:

Date Prep: 08.12.19 13.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.14.19 04.52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.14.19 04.52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.14.19 04.52	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.14.19 04.52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.14.19 04.52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.14.19 04.52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.14.19 04.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	08.14.19 04.52		
1,4-Difluorobenzene	540-36-3	97	%	70-130	08.14.19 04.52		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Remuda 25 Observation Well #001

Analytical Method: Chloride by EPA 300

Seq Number: 3098345

MB Sample Id: 7684013-1-BLK

Matrix: Solid

LCS Sample Id: 7684013-1-BKS

Prep Method: E300P

Date Prep: 08.12.19

LCSD Sample Id: 7684013-1-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	250	100	250	100	90-110	0	20	mg/kg	08.12.19 13:34	

Analytical Method: Chloride by EPA 300

Seq Number: 3098345

Parent Sample Id: 633573-004

Matrix: Soil

MS Sample Id: 633573-004 S

Prep Method: E300P

Date Prep: 08.12.19

MSD Sample Id: 633573-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	16.6	253	268	99	266	99	90-110	1	20	mg/kg	08.12.19 15:22	

Analytical Method: Chloride by EPA 300

Seq Number: 3098345

Parent Sample Id: 633648-009

Matrix: Soil

MS Sample Id: 633648-009 S

Prep Method: E300P

Date Prep: 08.12.19

MSD Sample Id: 633648-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	22.7	250	276	101	276	101	90-110	0	20	mg/kg	08.12.19 13:53	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3098276

MB Sample Id: 7684045-1-BLK

Matrix: Solid

LCS Sample Id: 7684045-1-BKS

Prep Method: TX1005P

Date Prep: 08.12.19

LCSD Sample Id: 7684045-1-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	1070	107	1080	108	70-135	1	20	mg/kg	08.12.19 23:36	
Diesel Range Organics (DRO)	<8.13	1000	964	96	972	97	70-135	1	20	mg/kg	08.12.19 23:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		119		118		70-135	%	08.12.19 23:36
o-Terphenyl	98		102		103		70-135	%	08.12.19 23:36

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

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

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

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



LT Environmental, Inc.
Remuda 25 Observation Well #001

Analytical Method: TPH by SW8015 Mod

Seq Number: 3098276

Parent Sample Id: 633267-001

Matrix: Soil

MS Sample Id: 633267-001 S

Prep Method: TX1005P

Date Prep: 08.12.19

MSD Sample Id: 633267-001 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	1080	108	1080	108	70-135	0	20	mg/kg	08.13.19 00:32	
Diesel Range Organics (DRO)	<8.12	999	979	98	987	99	70-135	1	20	mg/kg	08.13.19 00:32	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		115		70-135	%	08.13.19 00:32
o-Terphenyl	99		101		70-135	%	08.13.19 00:32

Analytical Method: BTEX by EPA 8021B

Seq Number: 3098608

MB Sample Id: 7684036-1-BLK

Matrix: Solid

LCS Sample Id: 7684036-1-BKS

Prep Method: SW5030B

Date Prep: 08.12.19

LCSD Sample Id: 7684036-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0996	100	0.0953	95	70-130	4	35	mg/kg	08.13.19 21:53	
Toluene	0.000640	0.100	0.0923	92	0.0912	91	70-130	1	35	mg/kg	08.13.19 21:53	
Ethylbenzene	<0.00200	0.100	0.0915	92	0.0908	91	70-130	1	35	mg/kg	08.13.19 21:53	
m,p-Xylenes	<0.00101	0.200	0.182	91	0.182	91	70-130	0	35	mg/kg	08.13.19 21:53	
o-Xylene	<0.000344	0.100	0.0958	96	0.0962	96	70-130	0	35	mg/kg	08.13.19 21:53	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		101		101		70-130	%	08.13.19 21:53
4-Bromofluorobenzene	106		107		107		70-130	%	08.13.19 21:53

Analytical Method: BTEX by EPA 8021B

Seq Number: 3098608

Parent Sample Id: 633573-001

Matrix: Soil

MS Sample Id: 633573-001 S

Prep Method: SW5030B

Date Prep: 08.12.19

MSD Sample Id: 633573-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0286	29	0.0737	74	70-130	88	35	mg/kg	08.13.19 22:33	XF
Toluene	<0.00200	0.100	0.0330	33	0.0622	62	70-130	61	35	mg/kg	08.13.19 22:33	XF
Ethylbenzene	<0.00200	0.100	0.0292	29	0.0554	55	70-130	62	35	mg/kg	08.13.19 22:33	XF
m,p-Xylenes	<0.00101	0.200	0.0356	18	0.0568	28	70-130	46	35	mg/kg	08.13.19 22:33	XF
o-Xylene	<0.00200	0.100	0.0442	44	0.0686	69	70-130	43	35	mg/kg	08.13.19 22:33	XF

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	86		100		70-130	%	08.13.19 22:33
4-Bromofluorobenzene	113		102		70-130	%	08.13.19 22:33

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



Work Order No:

Project Name:	Remuda #25 Observation Well #001	Turn Around
Project Number:	12919039	Routine ☒
P.O. Number:	Rural Eddy County	Rush:
Sampler's Name:	Robert McAfee	Due Date:
SAMPLE RECEIPT		
Temperature (°C):	3.2	Temp Blank: Yes No Wet Ice: Yes No
Received Initial:	(Yes) No	Thermometer ID: TMM007
Cooler Custody Seals:	Yes No N/A	Correction Factor: -0.2
Sample Custody Seals:	Yes No N/A	Total Containers: 6
Number of Containers		
(EPA 8015)		
(EPA 0-8021)		
de (EPA 300.0)		
TAT starts the day received by the lab, if received by 4:30pm		

[illegible]

1631 / 245.1 / 7470 / 7471 Hg

Date: _____

1	08-09-17 13:00		
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
70			
71			
72			
73			
74			
75			
76			
77			
78			
79			
80			
81			
82			
83			
84			
85			
86			
87			
88			
89			
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
100			



Inter-Office Shipment

Page 1 of 1

IOS Number **45971**

Date/Time: 08/09/19 15:08

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 7759 5249 8087

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
633624-001	S	FS10	08/07/19 13:30	SW8015MOD_NM	TPH by SW8015 Mod	08/15/19	08/21/19	JKR	GRO-DRO PHCC10C28 PF	
633624-001	S	FS10	08/07/19 13:30	SW8021B	BTEX by EPA 8021B	08/15/19	08/21/19	JKR	BR4FBZ BZ BZME EBZ X	
633624-001	S	FS10	08/07/19 13:30	E300_CL	Chloride by EPA 300	08/15/19	02/03/20	JKR	CL	
633624-002	S	FS11	08/07/19 13:35	SW8015MOD_NM	TPH by SW8015 Mod	08/15/19	08/21/19	JKR	GRO-DRO PHCC10C28 PF	
633624-002	S	FS11	08/07/19 13:35	E300_CL	Chloride by EPA 300	08/15/19	02/03/20	JKR	CL	
633624-002	S	FS11	08/07/19 13:35	SW8021B	BTEX by EPA 8021B	08/15/19	08/21/19	JKR	BR4FBZ BZ BZME EBZ X	
633624-003	S	FS12	08/08/19 10:50	SW8021B	BTEX by EPA 8021B	08/15/19	08/22/19	JKR	BR4FBZ BZ BZME EBZ X	
633624-003	S	FS12	08/08/19 10:50	SW8015MOD_NM	TPH by SW8015 Mod	08/15/19	08/22/19	JKR	GRO-DRO PHCC10C28 PF	
633624-003	S	FS12	08/08/19 10:50	E300_CL	Chloride by EPA 300	08/15/19	02/04/20	JKR	CL	
633624-004	S	FS13	08/08/19 11:00	SW8021B	BTEX by EPA 8021B	08/15/19	08/22/19	JKR	BR4FBZ BZ BZME EBZ X	
633624-004	S	FS13	08/08/19 11:00	SW8015MOD_NM	TPH by SW8015 Mod	08/15/19	08/22/19	JKR	GRO-DRO PHCC10C28 PF	
633624-004	S	FS13	08/08/19 11:00	E300_CL	Chloride by EPA 300	08/15/19	02/04/20	JKR	CL	
633624-005	S	FS14	08/08/19 11:10	SW8015MOD_NM	TPH by SW8015 Mod	08/15/19	08/22/19	JKR	GRO-DRO PHCC10C28 PF	
633624-005	S	FS14	08/08/19 11:10	E300_CL	Chloride by EPA 300	08/15/19	02/04/20	JKR	CL	
633624-005	S	FS14	08/08/19 11:10	SW8021B	BTEX by EPA 8021B	08/15/19	08/22/19	JKR	BR4FBZ BZ BZME EBZ X	
633624-006	S	FS15	08/08/19 11:20	SW8015MOD_NM	TPH by SW8015 Mod	08/15/19	08/22/19	JKR	GRO-DRO PHCC10C28 PF	
633624-006	S	FS15	08/08/19 11:20	E300_CL	Chloride by EPA 300	08/15/19	02/04/20	JKR	CL	
633624-006	S	FS15	08/08/19 11:20	SW8021B	BTEX by EPA 8021B	08/15/19	08/22/19	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Relinquished By:

Elizabeth McClellan

Received By:

Brianna Teel

Date Relinquished: 08/09/2019

Date Received: 08/12/2019 07:30

Cooler Temperature: 3.9



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 45971

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 08/09/2019 03:08 PM

Received By: Brianna Teel

Date Received: 08/12/2019 07:30 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.9
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: 08/12/2019



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 08/09/2019 01:00:00 PM

Work Order #: 633624

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes
#18 Water VOC samples have zero headspace?	N/A

Subbed to Xenco Midland.

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 08/09/2019

Checklist reviewed by:

Jessica Kramer

Date: 08/13/2019

Analytical Report 635446

**for
LT Environmental, Inc.**

Project Manager: Dan Moir

Remuda 25 OBS well #1

30-AUG-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

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

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



30-AUG-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **635446**

Remuda 25 OBS well #1

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 635446. 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. 635446 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

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 635446****LT Environmental, Inc., Arvada, CO**

Remuda 25 OBS well #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS16	S	08-27-19 09:25	3 ft	635446-001
FS17	S	08-27-19 09:30	3 ft	635446-002
FS18	S	08-27-19 09:40	4 ft	635446-003
FS19	S	08-27-19 10:20	1.5 ft	635446-004
FS20	S	08-27-19 10:30	3 ft	635446-005
FS21	S	08-27-19 10:45	2 ft	635446-006
FS22	S	08-27-19 10:50	2 ft	635446-007
FS23	S	08-27-19 11:00	2 ft	635446-008
FS24	S	08-28-19 09:30	2 ft	635446-009
FS25	S	08-28-19 09:35	2 ft	635446-010
FS26	S	08-28-19 09:40	2 ft	635446-011
FS27	S	08-28-19 09:45	2 ft	635446-012
FS28	S	08-28-19 09:50	2 ft	635446-013
FS29	S	08-28-19 09:55	2 ft	635446-014
FS30	S	08-28-19 10:00	2 ft	635446-015
FS31	S	08-28-19 10:05	2 ft	635446-016
FS32	S	08-28-19 10:10	2 ft	635446-017
FS33	S	08-28-19 10:15	2 ft	635446-018
FS34	S	08-28-19 10:20	2 ft	635446-019
FS35	S	08-28-19 10:25	2 ft	635446-020
FS36	S	08-28-19 10:30	2 ft	635446-021



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 25 OBS well #1

Project ID:

Work Order Number(s): 635446

Report Date: 30-AUG-19

Date Received: 08/28/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3100009 BTEX by EPA 8021B

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

Batch: LBA-3100240 BTEX by EPA 8021B

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



Certificate of Analysis Summary 635446

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 OBS well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Aug-28-19 04:42 pm

Report Date: 30-AUG-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	635446-001	635446-002	635446-003	635446-004	635446-005	635446-006
	<i>Field Id:</i>	FS16	FS17	FS18	FS19	FS20	FS21
	<i>Depth:</i>	3- ft	3- ft	4- ft	1.5- ft	3- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-27-19 09:25	Aug-27-19 09:30	Aug-27-19 09:40	Aug-27-19 10:20	Aug-27-19 10:30	Aug-27-19 10:45
BTEX by EPA 8021B	<i>Extracted:</i>	Aug-28-19 17:30	Aug-28-19 17:30	Aug-28-19 17:30	Aug-28-19 17:30	Aug-28-19 17:30	Aug-28-19 17:30
	<i>Analyzed:</i>	Aug-28-19 18:54	Aug-28-19 19:14	Aug-28-19 19:34	Aug-28-19 19:54	Aug-28-19 20:14	Aug-28-19 20:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000996 0.000996	<0.000988 0.000988	<0.00100 0.00100	<0.000994 0.000994	<0.000990 0.000990	<0.000990 0.000990
Toluene		<0.000996 0.000996	<0.000988 0.000988	<0.00100 0.00100	<0.000994 0.000994	<0.000990 0.000990	<0.000990 0.000990
Ethylbenzene		<0.000996 0.000996	<0.000988 0.000988	<0.00100 0.00100	<0.000994 0.000994	<0.000990 0.000990	<0.000990 0.000990
m,p-Xylenes		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198
o-Xylene		<0.000996 0.000996	<0.000988 0.000988	<0.00100 0.00100	<0.000994 0.000994	<0.000990 0.000990	<0.000990 0.000990
Total Xylenes		<0.000996 0.000996	<0.000988 0.000988	<0.00100 0.00100	<0.000994 0.000994	<0.000990 0.000990	<0.000990 0.000990
Total BTEX		<0.000996 0.000996	<0.000988 0.000988	<0.00100 0.00100	<0.000994 0.000994	<0.000990 0.000990	<0.000990 0.000990
Chloride by EPA 300	<i>Extracted:</i>	Aug-28-19 18:08	Aug-28-19 18:08	Aug-28-19 18:08	Aug-28-19 18:08	Aug-28-19 18:08	Aug-28-19 18:08
	<i>Analyzed:</i>	Aug-29-19 10:24	Aug-29-19 10:30	Aug-29-19 10:37	Aug-29-19 10:55	Aug-29-19 11:02	Aug-29-19 11:08
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		13.4 9.86	30.0 9.92	12.7 9.98	<9.92 9.92	<9.84 9.84	<9.96 9.96
TPH by SW8015 Mod	<i>Extracted:</i>	Aug-28-19 17:30	Aug-28-19 17:30	Aug-28-19 17:30	Aug-28-19 17:30	Aug-28-19 17:30	Aug-28-19 17:30
	<i>Analyzed:</i>	Aug-28-19 19:14	Aug-28-19 19:34	Aug-28-19 19:54	Aug-28-19 20:14	Aug-28-19 20:34	Aug-28-19 20:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<24.9 24.9	<24.9 24.9	<25.0 25.0	<24.9 24.9	<24.8 24.8	<24.8 24.8
Diesel Range Organics (DRO)		<24.9 24.9	<24.9 24.9	<25.0 25.0	<24.9 24.9	<24.8 24.8	<24.8 24.8
Motor Oil Range Hydrocarbons (MRO)		<24.9 24.9	<24.9 24.9	<25.0 25.0	<24.9 24.9	<24.8 24.8	<24.8 24.8
Total TPH		<24.9 24.9	<24.9 24.9	<25.0 25.0	<24.9 24.9	<24.8 24.8	<24.8 24.8
Total GRO-DRO		<24.9 24.9	<24.9 24.9	<25.0 25.0	<24.9 24.9	<24.8 24.8	<24.8 24.8

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

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 635446

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 OBS well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Aug-28-19 04:42 pm

Report Date: 30-AUG-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	635446-007	635446-008	635446-009	635446-010	635446-011	635446-012
	<i>Field Id:</i>	FS22	FS23	FS24	FS25	FS26	FS27
	<i>Depth:</i>	2- ft	2- ft	2- ft	2- ft	2- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-27-19 10:50	Aug-27-19 11:00	Aug-28-19 09:30	Aug-28-19 09:35	Aug-28-19 09:40	Aug-28-19 09:45
BTEX by EPA 8021B	<i>Extracted:</i>	Aug-28-19 17:30	Aug-28-19 17:30	Aug-28-19 17:30	Aug-28-19 17:30	Aug-29-19 08:00	Aug-29-19 08:00
	<i>Analyzed:</i>	Aug-28-19 20:53	Aug-28-19 21:13	Aug-28-19 22:13	Aug-28-19 22:33	Aug-29-19 11:42	Aug-29-19 12:02
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998	<0.000980 0.000980	<0.00100 0.00100	<0.000994 0.000994
Toluene		<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998	<0.000980 0.000980	<0.00100 0.00100	<0.000994 0.000994
Ethylbenzene		<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998	<0.000980 0.000980	<0.00100 0.00100	<0.000994 0.000994
m,p-Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00196 0.00196	<0.00200 0.00200	<0.00199 0.00199
o-Xylene		<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998	<0.000980 0.000980	<0.00100 0.00100	<0.000994 0.000994
Total Xylenes		<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998	<0.000980 0.000980	<0.00100 0.00100	<0.000994 0.000994
Total BTEX		<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998	<0.000980 0.000980	<0.00100 0.00100	<0.000994 0.000994
Chloride by EPA 300	<i>Extracted:</i>	Aug-28-19 18:08	Aug-28-19 18:08	Aug-28-19 18:08	Aug-28-19 18:08	Aug-28-19 18:08	Aug-28-19 18:08
	<i>Analyzed:</i>	Aug-29-19 11:14	Aug-29-19 11:20	Aug-29-19 13:03	Aug-29-19 13:10	Aug-29-19 13:16	Aug-29-19 13:47
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<9.90 9.90	18.5 9.88	13.4 9.90	29.1 9.82	32.2 9.90	45.6 9.90
TPH by SW8015 Mod	<i>Extracted:</i>	Aug-28-19 17:30	Aug-28-19 17:30	Aug-28-19 17:30	Aug-28-19 17:30	Aug-29-19 09:00	Aug-29-19 09:00
	<i>Analyzed:</i>	Aug-28-19 21:14	Aug-28-19 21:34	Aug-28-19 22:15	Aug-28-19 22:35	Aug-29-19 11:44	Aug-29-19 12:45
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<25.0 25.0	<24.8 24.8	<24.8 24.8	<24.8 24.8	<24.9 24.9	<24.9 24.9
Diesel Range Organics (DRO)		<25.0 25.0	<24.8 24.8	<24.8 24.8	<24.8 24.8	<24.9 24.9	<24.9 24.9
Motor Oil Range Hydrocarbons (MRO)		<25.0 25.0	<24.8 24.8	<24.8 24.8	<24.8 24.8	<24.9 24.9	<24.9 24.9
Total TPH		<25.0 25.0	<24.8 24.8	<24.8 24.8	<24.8 24.8	<24.9 24.9	<24.9 24.9
Total GRO-DRO		<25.0 25.0	<24.8 24.8	<24.8 24.8	<24.8 24.8	<24.9 24.9	<24.9 24.9

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

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 635446

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 OBS well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Aug-28-19 04:42 pm

Report Date: 30-AUG-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	635446-013	635446-014	635446-015	635446-016	635446-017	635446-018
	<i>Field Id:</i>	FS28	FS29	FS30	FS31	FS32	FS33
	<i>Depth:</i>	2- ft	2- ft	2- ft	2- ft	2- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-28-19 09:50	Aug-28-19 09:55	Aug-28-19 10:00	Aug-28-19 10:05	Aug-28-19 10:10	Aug-28-19 10:15
BTEX by EPA 8021B	<i>Extracted:</i>	Aug-29-19 08:00	Aug-29-19 08:00	Aug-29-19 08:00	Aug-29-19 08:00	Aug-29-19 08:00	Aug-29-19 08:00
	<i>Analyzed:</i>	Aug-29-19 12:22	Aug-29-19 12:42	Aug-29-19 13:02	Aug-29-19 13:21	Aug-29-19 13:41	Aug-29-19 14:01
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000986 0.000986	<0.000990 0.000990	<0.00101 0.00101	<0.000996 0.000996	<0.00101 0.00101	<0.00101 0.00101
Toluene		<0.000986 0.000986	<0.000990 0.000990	<0.00101 0.00101	<0.000996 0.000996	<0.00101 0.00101	<0.00101 0.00101
Ethylbenzene		<0.000986 0.000986	<0.000990 0.000990	<0.00101 0.00101	<0.000996 0.000996	<0.00101 0.00101	<0.00101 0.00101
m,p-Xylenes		<0.00197 0.00197	<0.00198 0.00198	<0.00202 0.00202	<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202
o-Xylene		<0.000986 0.000986	<0.000990 0.000990	<0.00101 0.00101	<0.000996 0.000996	<0.00101 0.00101	<0.00101 0.00101
Total Xylenes		<0.000986 0.000986	<0.000990 0.000990	<0.00101 0.00101	<0.000996 0.000996	<0.00101 0.00101	<0.00101 0.00101
Total BTEX		<0.000986 0.000986	<0.000990 0.000990	<0.00101 0.00101	<0.000996 0.000996	<0.00101 0.00101	<0.00101 0.00101
Chloride by EPA 300	<i>Extracted:</i>	Aug-28-19 18:08	Aug-28-19 18:08	Aug-28-19 18:08	Aug-28-19 18:08	Aug-28-19 18:08	Aug-28-19 18:08
	<i>Analyzed:</i>	Aug-29-19 13:54	Aug-29-19 14:00	Aug-29-19 14:06	Aug-29-19 14:12	Aug-29-19 14:19	Aug-29-19 14:25
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		34.4 K 9.88	34.3 9.92	32.9 9.96	<9.88 9.88	14.6 9.88	17.5 9.98
TPH by SW8015 Mod	<i>Extracted:</i>	Aug-29-19 09:00	Aug-29-19 09:00	Aug-29-19 09:00	Aug-29-19 09:00	Aug-29-19 09:00	Aug-29-19 09:00
	<i>Analyzed:</i>	Aug-29-19 13:05	Aug-29-19 13:26	Aug-29-19 13:46	Aug-29-19 14:07	Aug-29-19 14:27	Aug-29-19 14:48
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<24.9 24.9	<25.0 25.0	<25.1 25.1	<25.0 25.0	<25.0 25.0	<25.0 25.0
Diesel Range Organics (DRO)		<24.9 24.9	<25.0 25.0	<25.1 25.1	<25.0 25.0	<25.0 25.0	<25.0 25.0
Motor Oil Range Hydrocarbons (MRO)		<24.9 24.9	<25.0 25.0	<25.1 25.1	<25.0 25.0	<25.0 25.0	<25.0 25.0
Total TPH		<24.9 24.9	<25.0 25.0	<25.1 25.1	<25.0 25.0	<25.0 25.0	<25.0 25.0
Total GRO-DRO		<24.9 24.9	<25.0 25.0	<25.1 25.1	<25.0 25.0	<25.0 25.0	<25.0 25.0

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
Project Assistant



Certificate of Analysis Summary 635446

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 OBS well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Aug-28-19 04:42 pm

Report Date: 30-AUG-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	635446-019	635446-020	635446-021			
	Field Id:	FS34	FS35	FS36			
	Depth:	2- ft	2- ft	2- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Aug-28-19 10:20	Aug-28-19 10:25	Aug-28-19 10:30			
BTEX by EPA 8021B	Extracted:	Aug-29-19 08:00	Aug-29-19 08:00	Aug-29-19 08:00			
	Analyzed:	Aug-29-19 14:21	Aug-29-19 14:41	Aug-29-19 15:41			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100			
Toluene		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100			
Ethylbenzene		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100			
m,p-Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201			
o-Xylene		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100			
Total Xylenes		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100			
Total BTEX		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100			
Chloride by EPA 300	Extracted:	Aug-29-19 12:00	Aug-29-19 12:00	Aug-29-19 12:00			
	Analyzed:	Aug-29-19 15:02	Aug-29-19 15:21	Aug-29-19 15:27			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		24.1 9.94	22.6 9.94	54.5 9.92			
TPH by SW8015 Mod	Extracted:	Aug-29-19 09:00	Aug-29-19 09:00	Aug-29-19 09:00			
	Analyzed:	Aug-29-19 15:09	Aug-29-19 15:29	Aug-29-19 16:11			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<25.0 25.0	<25.0 25.0	<25.0 25.0			
Diesel Range Organics (DRO)		<25.0 25.0	<25.0 25.0	<25.0 25.0			
Motor Oil Range Hydrocarbons (MRO)		<25.0 25.0	<25.0 25.0	<25.0 25.0			
Total TPH		<25.0 25.0	<25.0 25.0	<25.0 25.0			
Total GRO-DRO		<25.0 25.0	<25.0 25.0	<25.0 25.0			

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
Project Assistant



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS16**
Lab Sample Id: 635446-001

Matrix: Soil
Date Collected: 08.27.19 09.25

Date Received: 08.28.19 16.42
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100054

Date Prep: 08.28.19 18.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.4	9.86	mg/kg	08.29.19 10.24		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100015

Date Prep: 08.28.19 17.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	08.28.19 19.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	08.28.19 19.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	08.28.19 19.14	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	08.28.19 19.14	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	08.28.19 19.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	08.28.19 19.14	
o-Terphenyl	84-15-1	90	%	70-135	08.28.19 19.14	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS16**
Lab Sample Id: 635446-001

Matrix: Soil
Date Collected: 08.27.19 09.25

Date Received: 08.28.19 16.42
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.28.19 17.30

Basis: Wet Weight

Seq Number: 3100009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	08.28.19 18.54	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	08.28.19 18.54	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	08.28.19 18.54	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	08.28.19 18.54	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	08.28.19 18.54	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	08.28.19 18.54	U	1
Total BTEX		<0.000996	0.000996	mg/kg	08.28.19 18.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	126	%	70-130	08.28.19 18.54		
1,4-Difluorobenzene	540-36-3	110	%	70-130	08.28.19 18.54		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS17** Matrix: Soil Date Received: 08.28.19 16.42
 Lab Sample Id: 635446-002 Date Collected: 08.27.19 09.30 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.28.19 18.08 Basis: Wet Weight
 Seq Number: 3100054

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	30.0	9.92	mg/kg	08.29.19 10.30		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.28.19 17.30 Basis: Wet Weight
 Seq Number: 3100015

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	08.28.19 19.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	08.28.19 19.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	08.28.19 19.34	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	08.28.19 19.34	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	08.28.19 19.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	08.28.19 19.34	
o-Terphenyl	84-15-1	93	%	70-135	08.28.19 19.34	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS17**
Lab Sample Id: 635446-002

Matrix: Soil
Date Collected: 08.27.19 09.30

Date Received: 08.28.19 16.42
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.28.19 17.30

Basis: Wet Weight

Seq Number: 3100009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000988	0.000988	mg/kg	08.28.19 19.14	U	1
Toluene	108-88-3	<0.000988	0.000988	mg/kg	08.28.19 19.14	U	1
Ethylbenzene	100-41-4	<0.000988	0.000988	mg/kg	08.28.19 19.14	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	08.28.19 19.14	U	1
o-Xylene	95-47-6	<0.000988	0.000988	mg/kg	08.28.19 19.14	U	1
Total Xylenes	1330-20-7	<0.000988	0.000988	mg/kg	08.28.19 19.14	U	1
Total BTEX		<0.000988	0.000988	mg/kg	08.28.19 19.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	08.28.19 19.14		
1,4-Difluorobenzene	540-36-3	113	%	70-130	08.28.19 19.14		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS18**
Lab Sample Id: 635446-003

Matrix: Soil
Date Collected: 08.27.19 09.40

Date Received: 08.28.19 16.42
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100054

Date Prep: 08.28.19 18.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.7	9.98	mg/kg	08.29.19 10.37		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100015

Date Prep: 08.28.19 17.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	08.28.19 19.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.28.19 19.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	08.28.19 19.54	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	08.28.19 19.54	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	08.28.19 19.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	08.28.19 19.54	
o-Terphenyl	84-15-1	90	%	70-135	08.28.19 19.54	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS18**
Lab Sample Id: 635446-003

Matrix: Soil
Date Collected: 08.27.19 09.40

Date Received: 08.28.19 16.42
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.28.19 17.30

Basis: Wet Weight

Seq Number: 3100009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	08.28.19 19.34	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	08.28.19 19.34	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	08.28.19 19.34	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	08.28.19 19.34	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	08.28.19 19.34	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	08.28.19 19.34	U	1
Total BTEX		<0.00100	0.00100	mg/kg	08.28.19 19.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	126	%	70-130	08.28.19 19.34		
1,4-Difluorobenzene	540-36-3	115	%	70-130	08.28.19 19.34		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS19**
Lab Sample Id: 635446-004

Matrix: Soil
Date Collected: 08.27.19 10.20

Date Received: 08.28.19 16.42
Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100054

Date Prep: 08.28.19 18.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.92	9.92	mg/kg	08.29.19 10.55	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100015

Date Prep: 08.28.19 17.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	08.28.19 20.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	08.28.19 20.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	08.28.19 20.14	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	08.28.19 20.14	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	08.28.19 20.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	08.28.19 20.14	
o-Terphenyl	84-15-1	91	%	70-135	08.28.19 20.14	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS19**
Lab Sample Id: 635446-004

Matrix: Soil
Date Collected: 08.27.19 10.20

Date Received: 08.28.19 16.42
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DTH

Analyst: DTH

Seq Number: 3100009

Date Prep: 08.28.19 17.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	08.28.19 19.54	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	08.28.19 19.54	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	08.28.19 19.54	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	08.28.19 19.54	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	08.28.19 19.54	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	08.28.19 19.54	U	1
Total BTEX		<0.000994	0.000994	mg/kg	08.28.19 19.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.28.19 19.54		
4-Bromofluorobenzene	460-00-4	105	%	70-130	08.28.19 19.54		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS20**
Lab Sample Id: 635446-005

Matrix: Soil
Date Collected: 08.27.19 10.30

Date Received: 08.28.19 16.42
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100054

Date Prep: 08.28.19 18.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.84	9.84	mg/kg	08.29.19 11.02	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100015

Date Prep: 08.28.19 17.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.8	24.8	mg/kg	08.28.19 20.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.8	24.8	mg/kg	08.28.19 20.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.8	24.8	mg/kg	08.28.19 20.34	U	1
Total TPH	PHC635	<24.8	24.8	mg/kg	08.28.19 20.34	U	1
Total GRO-DRO	PHC628	<24.8	24.8	mg/kg	08.28.19 20.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	08.28.19 20.34	
o-Terphenyl	84-15-1	99	%	70-135	08.28.19 20.34	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS20**
Lab Sample Id: 635446-005

Matrix: Soil
Date Collected: 08.27.19 10.30

Date Received: 08.28.19 16.42
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.28.19 17.30

Basis: Wet Weight

Seq Number: 3100009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000990	0.000990	mg/kg	08.28.19 20.14	U	1
Toluene	108-88-3	<0.000990	0.000990	mg/kg	08.28.19 20.14	U	1
Ethylbenzene	100-41-4	<0.000990	0.000990	mg/kg	08.28.19 20.14	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	08.28.19 20.14	U	1
o-Xylene	95-47-6	<0.000990	0.000990	mg/kg	08.28.19 20.14	U	1
Total Xylenes	1330-20-7	<0.000990	0.000990	mg/kg	08.28.19 20.14	U	1
Total BTEX		<0.000990	0.000990	mg/kg	08.28.19 20.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	08.28.19 20.14		
1,4-Difluorobenzene	540-36-3	108	%	70-130	08.28.19 20.14		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS21** Matrix: Soil Date Received: 08.28.19 16.42
 Lab Sample Id: 635446-006 Date Collected: 08.27.19 10.45 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.28.19 18.08 Basis: Wet Weight
 Seq Number: 3100054

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.96	9.96	mg/kg	08.29.19 11.08	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.28.19 17.30 Basis: Wet Weight
 Seq Number: 3100015

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.8	24.8	mg/kg	08.28.19 20.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.8	24.8	mg/kg	08.28.19 20.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.8	24.8	mg/kg	08.28.19 20.54	U	1
Total TPH	PHC635	<24.8	24.8	mg/kg	08.28.19 20.54	U	1
Total GRO-DRO	PHC628	<24.8	24.8	mg/kg	08.28.19 20.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	08.28.19 20.54	
o-Terphenyl	84-15-1	90	%	70-135	08.28.19 20.54	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS21**
Lab Sample Id: 635446-006

Matrix: Soil
Date Collected: 08.27.19 10.45

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.28.19 17.30

Basis: Wet Weight

Seq Number: 3100009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000990	0.000990	mg/kg	08.28.19 20.33	U	1
Toluene	108-88-3	<0.000990	0.000990	mg/kg	08.28.19 20.33	U	1
Ethylbenzene	100-41-4	<0.000990	0.000990	mg/kg	08.28.19 20.33	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	08.28.19 20.33	U	1
o-Xylene	95-47-6	<0.000990	0.000990	mg/kg	08.28.19 20.33	U	1
Total Xylenes	1330-20-7	<0.000990	0.000990	mg/kg	08.28.19 20.33	U	1
Total BTEX		<0.000990	0.000990	mg/kg	08.28.19 20.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	122	%	70-130	08.28.19 20.33		
1,4-Difluorobenzene	540-36-3	109	%	70-130	08.28.19 20.33		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: FS22
Lab Sample Id: 635446-007

Matrix: Soil
Date Collected: 08.27.19 10.50

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100054

Date Prep: 08.28.19 18.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.90	9.90	mg/kg	08.29.19 11.14	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100015

Date Prep: 08.28.19 17.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	08.28.19 21.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.28.19 21.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	08.28.19 21.14	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	08.28.19 21.14	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	08.28.19 21.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	08.28.19 21.14	
o-Terphenyl	84-15-1	94	%	70-135	08.28.19 21.14	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: FS22
Lab Sample Id: 635446-007

Matrix: Soil
Date Collected: 08.27.19 10.50

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.28.19 17.30

Basis: Wet Weight

Seq Number: 3100009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	08.28.19 20.53	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	08.28.19 20.53	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	08.28.19 20.53	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	08.28.19 20.53	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	08.28.19 20.53	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	08.28.19 20.53	U	1
Total BTEX		<0.00100	0.00100	mg/kg	08.28.19 20.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	08.28.19 20.53		
1,4-Difluorobenzene	540-36-3	109	%	70-130	08.28.19 20.53		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS23**
Lab Sample Id: 635446-008

Matrix: Soil
Date Collected: 08.27.19 11.00

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100054

Date Prep: 08.28.19 18.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18.5	9.88	mg/kg	08.29.19 11.20		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100015

Date Prep: 08.28.19 17.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.8	24.8	mg/kg	08.28.19 21.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.8	24.8	mg/kg	08.28.19 21.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.8	24.8	mg/kg	08.28.19 21.34	U	1
Total TPH	PHC635	<24.8	24.8	mg/kg	08.28.19 21.34	U	1
Total GRO-DRO	PHC628	<24.8	24.8	mg/kg	08.28.19 21.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	08.28.19 21.34	
o-Terphenyl	84-15-1	93	%	70-135	08.28.19 21.34	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS23**
Lab Sample Id: 635446-008

Matrix: Soil
Date Collected: 08.27.19 11.00

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.28.19 17.30

Basis: Wet Weight

Seq Number: 3100009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000992	0.000992	mg/kg	08.28.19 21.13	U	1
Toluene	108-88-3	<0.000992	0.000992	mg/kg	08.28.19 21.13	U	1
Ethylbenzene	100-41-4	<0.000992	0.000992	mg/kg	08.28.19 21.13	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	08.28.19 21.13	U	1
o-Xylene	95-47-6	<0.000992	0.000992	mg/kg	08.28.19 21.13	U	1
Total Xylenes	1330-20-7	<0.000992	0.000992	mg/kg	08.28.19 21.13	U	1
Total BTEX		<0.000992	0.000992	mg/kg	08.28.19 21.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	08.28.19 21.13		
4-Bromofluorobenzene	460-00-4	114	%	70-130	08.28.19 21.13		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS24** Matrix: Soil Date Received: 08.28.19 16.42
 Lab Sample Id: 635446-009 Date Collected: 08.28.19 09.30 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.28.19 18.08 Basis: Wet Weight
 Seq Number: 3100054

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.4	9.90	mg/kg	08.29.19 13.03		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.28.19 17.30 Basis: Wet Weight
 Seq Number: 3100015

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.8	24.8	mg/kg	08.28.19 22.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.8	24.8	mg/kg	08.28.19 22.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.8	24.8	mg/kg	08.28.19 22.15	U	1
Total TPH	PHC635	<24.8	24.8	mg/kg	08.28.19 22.15	U	1
Total GRO-DRO	PHC628	<24.8	24.8	mg/kg	08.28.19 22.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	08.28.19 22.15	
o-Terphenyl	84-15-1	95	%	70-135	08.28.19 22.15	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS24**
Lab Sample Id: 635446-009

Matrix: Soil
Date Collected: 08.28.19 09.30

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.28.19 17.30

Basis: Wet Weight

Seq Number: 3100009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	08.28.19 22.13	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	08.28.19 22.13	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	08.28.19 22.13	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	08.28.19 22.13	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	08.28.19 22.13	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	08.28.19 22.13	U	1
Total BTEX		<0.000998	0.000998	mg/kg	08.28.19 22.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.28.19 22.13		
4-Bromofluorobenzene	460-00-4	112	%	70-130	08.28.19 22.13		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS25** Matrix: **Soil** Date Received: 08.28.19 16.42
 Lab Sample Id: 635446-010 Date Collected: 08.28.19 09.35 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: **MAB** % Moisture:
 Analyst: **MAB** Date Prep: 08.28.19 18.08 Basis: **Wet Weight**
 Seq Number: 3100054

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	29.1	9.82	mg/kg	08.29.19 13.10		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: **DTH** % Moisture:
 Analyst: **DTH** Date Prep: 08.28.19 17.30 Basis: **Wet Weight**
 Seq Number: 3100015

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.8	24.8	mg/kg	08.28.19 22.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.8	24.8	mg/kg	08.28.19 22.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.8	24.8	mg/kg	08.28.19 22.35	U	1
Total TPH	PHC635	<24.8	24.8	mg/kg	08.28.19 22.35	U	1
Total GRO-DRO	PHC628	<24.8	24.8	mg/kg	08.28.19 22.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	08.28.19 22.35	
o-Terphenyl	84-15-1	92	%	70-135	08.28.19 22.35	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS25**
Lab Sample Id: 635446-010

Matrix: Soil
Date Collected: 08.28.19 09.35

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.28.19 17.30

Basis: Wet Weight

Seq Number: 3100009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000980	0.000980	mg/kg	08.28.19 22.33	U	1
Toluene	108-88-3	<0.000980	0.000980	mg/kg	08.28.19 22.33	U	1
Ethylbenzene	100-41-4	<0.000980	0.000980	mg/kg	08.28.19 22.33	U	1
m,p-Xylenes	179601-23-1	<0.00196	0.00196	mg/kg	08.28.19 22.33	U	1
o-Xylene	95-47-6	<0.000980	0.000980	mg/kg	08.28.19 22.33	U	1
Total Xylenes	1330-20-7	<0.000980	0.000980	mg/kg	08.28.19 22.33	U	1
Total BTEX		<0.000980	0.000980	mg/kg	08.28.19 22.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	109	%	70-130	08.28.19 22.33		
4-Bromofluorobenzene	460-00-4	116	%	70-130	08.28.19 22.33		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS26**
Lab Sample Id: 635446-011

Matrix: Soil
Date Collected: 08.28.19 09.40

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100054

Date Prep: 08.28.19 18.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	32.2	9.90	mg/kg	08.29.19 13.16		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100175

Date Prep: 08.29.19 09.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	08.29.19 11.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	08.29.19 11.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	08.29.19 11.44	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	08.29.19 11.44	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	08.29.19 11.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	08.29.19 11.44	
o-Terphenyl	84-15-1	100	%	70-135	08.29.19 11.44	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS26**
Lab Sample Id: 635446-011

Matrix: Soil
Date Collected: 08.28.19 09.40

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.29.19 08.00

Basis: Wet Weight

Seq Number: 3100240

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	08.29.19 11.42	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	08.29.19 11.42	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	08.29.19 11.42	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	08.29.19 11.42	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	08.29.19 11.42	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	08.29.19 11.42	U	1
Total BTEX		<0.00100	0.00100	mg/kg	08.29.19 11.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	08.29.19 11.42		
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.29.19 11.42		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: FS27
Lab Sample Id: 635446-012

Matrix: Soil
Date Collected: 08.28.19 09.45

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100054

Date Prep: 08.28.19 18.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	45.6	9.90	mg/kg	08.29.19 13.47		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100175

Date Prep: 08.29.19 09.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	08.29.19 12.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	08.29.19 12.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	08.29.19 12.45	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	08.29.19 12.45	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	08.29.19 12.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	08.29.19 12.45	
o-Terphenyl	84-15-1	99	%	70-135	08.29.19 12.45	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: FS27
Lab Sample Id: 635446-012

Matrix: Soil
Date Collected: 08.28.19 09.45

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.29.19 08.00

Basis: Wet Weight

Seq Number: 3100240

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	08.29.19 12.02	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	08.29.19 12.02	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	08.29.19 12.02	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	08.29.19 12.02	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	08.29.19 12.02	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	08.29.19 12.02	U	1
Total BTEX		<0.000994	0.000994	mg/kg	08.29.19 12.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.29.19 12.02		
4-Bromofluorobenzene	460-00-4	102	%	70-130	08.29.19 12.02		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS28** Matrix: Soil Date Received: 08.28.19 16.42
 Lab Sample Id: 635446-013 Date Collected: 08.28.19 09.50 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.28.19 18.08 Basis: Wet Weight
 Seq Number: 3100054

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	34.4	9.88	mg/kg	08.29.19 13.54	K	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.29.19 09.00 Basis: Wet Weight
 Seq Number: 3100175

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	08.29.19 13.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	08.29.19 13.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	08.29.19 13.05	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	08.29.19 13.05	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	08.29.19 13.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	08.29.19 13.05	
o-Terphenyl	84-15-1	97	%	70-135	08.29.19 13.05	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS28**
Lab Sample Id: 635446-013

Matrix: Soil
Date Collected: 08.28.19 09.50

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.29.19 08.00

Basis: Wet Weight

Seq Number: 3100240

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000986	0.000986	mg/kg	08.29.19 12.22	U	1
Toluene	108-88-3	<0.000986	0.000986	mg/kg	08.29.19 12.22	U	1
Ethylbenzene	100-41-4	<0.000986	0.000986	mg/kg	08.29.19 12.22	U	1
m,p-Xylenes	179601-23-1	<0.00197	0.00197	mg/kg	08.29.19 12.22	U	1
o-Xylene	95-47-6	<0.000986	0.000986	mg/kg	08.29.19 12.22	U	1
Total Xylenes	1330-20-7	<0.000986	0.000986	mg/kg	08.29.19 12.22	U	1
Total BTEX		<0.000986	0.000986	mg/kg	08.29.19 12.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.29.19 12.22		
4-Bromofluorobenzene	460-00-4	114	%	70-130	08.29.19 12.22		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS29** Matrix: Soil Date Received: 08.28.19 16.42
 Lab Sample Id: 635446-014 Date Collected: 08.28.19 09.55 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.28.19 18.08 Basis: Wet Weight
 Seq Number: 3100054

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	34.3	9.92	mg/kg	08.29.19 14.00		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.29.19 09.00 Basis: Wet Weight
 Seq Number: 3100175

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	08.29.19 13.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.29.19 13.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	08.29.19 13.26	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	08.29.19 13.26	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	08.29.19 13.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	08.29.19 13.26	
o-Terphenyl	84-15-1	98	%	70-135	08.29.19 13.26	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS29**
Lab Sample Id: 635446-014

Matrix: Soil
Date Collected: 08.28.19 09.55

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.29.19 08.00

Basis: Wet Weight

Seq Number: 3100240

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000990	0.000990	mg/kg	08.29.19 12.42	U	1
Toluene	108-88-3	<0.000990	0.000990	mg/kg	08.29.19 12.42	U	1
Ethylbenzene	100-41-4	<0.000990	0.000990	mg/kg	08.29.19 12.42	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	08.29.19 12.42	U	1
o-Xylene	95-47-6	<0.000990	0.000990	mg/kg	08.29.19 12.42	U	1
Total Xylenes	1330-20-7	<0.000990	0.000990	mg/kg	08.29.19 12.42	U	1
Total BTEX		<0.000990	0.000990	mg/kg	08.29.19 12.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	08.29.19 12.42		
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.29.19 12.42		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS30**
Lab Sample Id: 635446-015

Matrix: Soil
Date Collected: 08.28.19 10.00

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100054

Date Prep: 08.28.19 18.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	32.9	9.96	mg/kg	08.29.19 14.06		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100175

Date Prep: 08.29.19 09.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	08.29.19 13.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	08.29.19 13.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	08.29.19 13.46	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	08.29.19 13.46	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	08.29.19 13.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	08.29.19 13.46	
o-Terphenyl	84-15-1	103	%	70-135	08.29.19 13.46	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS30**
Lab Sample Id: 635446-015

Matrix: Soil
Date Collected: 08.28.19 10.00

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.29.19 08.00

Basis: Wet Weight

Seq Number: 3100240

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	08.29.19 13.02	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	08.29.19 13.02	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	08.29.19 13.02	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	08.29.19 13.02	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	08.29.19 13.02	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	08.29.19 13.02	U	1
Total BTEX		<0.00101	0.00101	mg/kg	08.29.19 13.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	125	%	70-130	08.29.19 13.02		
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.29.19 13.02		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS31** Matrix: Soil Date Received: 08.28.19 16.42
 Lab Sample Id: 635446-016 Date Collected: 08.28.19 10.05 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.28.19 18.08 Basis: Wet Weight
 Seq Number: 3100054

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.88	9.88	mg/kg	08.29.19 14.12	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.29.19 09.00 Basis: Wet Weight
 Seq Number: 3100175

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	08.29.19 14.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.29.19 14.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	08.29.19 14.07	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	08.29.19 14.07	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	08.29.19 14.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	08.29.19 14.07	
o-Terphenyl	84-15-1	98	%	70-135	08.29.19 14.07	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS31**
Lab Sample Id: 635446-016

Matrix: Soil
Date Collected: 08.28.19 10.05

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.29.19 08.00

Basis: Wet Weight

Seq Number: 3100240

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	08.29.19 13.21	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	08.29.19 13.21	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	08.29.19 13.21	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	08.29.19 13.21	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	08.29.19 13.21	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	08.29.19 13.21	U	1
Total BTEX		<0.000996	0.000996	mg/kg	08.29.19 13.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.29.19 13.21		
4-Bromofluorobenzene	460-00-4	98	%	70-130	08.29.19 13.21		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS32** Matrix: Soil Date Received: 08.28.19 16.42
 Lab Sample Id: 635446-017 Date Collected: 08.28.19 10.10 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.28.19 18.08 Basis: Wet Weight
 Seq Number: 3100054

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.6	9.88	mg/kg	08.29.19 14.19		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.29.19 09.00 Basis: Wet Weight
 Seq Number: 3100175

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	08.29.19 14.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.29.19 14.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	08.29.19 14.27	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	08.29.19 14.27	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	08.29.19 14.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	08.29.19 14.27	
o-Terphenyl	84-15-1	100	%	70-135	08.29.19 14.27	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS32**
Lab Sample Id: 635446-017

Matrix: Soil
Date Collected: 08.28.19 10.10

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.29.19 08.00

Basis: Wet Weight

Seq Number: 3100240

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	08.29.19 13.41	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	08.29.19 13.41	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	08.29.19 13.41	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	08.29.19 13.41	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	08.29.19 13.41	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	08.29.19 13.41	U	1
Total BTEX		<0.00101	0.00101	mg/kg	08.29.19 13.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	08.29.19 13.41		
1,4-Difluorobenzene	540-36-3	108	%	70-130	08.29.19 13.41		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS33** Matrix: Soil Date Received: 08.28.19 16.42
 Lab Sample Id: 635446-018 Date Collected: 08.28.19 10.15 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.28.19 18.08 Basis: Wet Weight
 Seq Number: 3100054

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.5	9.98	mg/kg	08.29.19 14.25		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.29.19 09.00 Basis: Wet Weight
 Seq Number: 3100175

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	08.29.19 14.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.29.19 14.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	08.29.19 14.48	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	08.29.19 14.48	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	08.29.19 14.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	08.29.19 14.48	
o-Terphenyl	84-15-1	97	%	70-135	08.29.19 14.48	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS33**
Lab Sample Id: 635446-018

Matrix: Soil
Date Collected: 08.28.19 10.15

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.29.19 08.00

Basis: Wet Weight

Seq Number: 3100240

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	08.29.19 14.01	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	08.29.19 14.01	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	08.29.19 14.01	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	08.29.19 14.01	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	08.29.19 14.01	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	08.29.19 14.01	U	1
Total BTEX		<0.00101	0.00101	mg/kg	08.29.19 14.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.29.19 14.01		
4-Bromofluorobenzene	460-00-4	113	%	70-130	08.29.19 14.01		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS34** Matrix: Soil Date Received: 08.28.19 16.42
 Lab Sample Id: 635446-019 Date Collected: 08.28.19 10.20 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.29.19 12.00 Basis: Wet Weight
 Seq Number: 3100197

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.1	9.94	mg/kg	08.29.19 15.02		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.29.19 09.00 Basis: Wet Weight
 Seq Number: 3100175

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	08.29.19 15.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.29.19 15.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	08.29.19 15.09	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	08.29.19 15.09	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	08.29.19 15.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	08.29.19 15.09	
o-Terphenyl	84-15-1	96	%	70-135	08.29.19 15.09	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS34**
Lab Sample Id: 635446-019

Matrix: Soil
Date Collected: 08.28.19 10.20

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.29.19 08.00

Basis: Wet Weight

Seq Number: 3100240

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	08.29.19 14.21	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	08.29.19 14.21	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	08.29.19 14.21	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	08.29.19 14.21	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	08.29.19 14.21	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	08.29.19 14.21	U	1
Total BTEX		<0.00101	0.00101	mg/kg	08.29.19 14.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.29.19 14.21		
4-Bromofluorobenzene	460-00-4	105	%	70-130	08.29.19 14.21		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS35** Matrix: **Soil** Date Received: 08.28.19 16.42
 Lab Sample Id: 635446-020 Date Collected: 08.28.19 10.25 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: **MAB** % Moisture:
 Analyst: **MAB** Date Prep: 08.29.19 12.00 Basis: **Wet Weight**
 Seq Number: 3100197

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.6	9.94	mg/kg	08.29.19 15.21		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: **DTH** % Moisture:
 Analyst: **DTH** Date Prep: 08.29.19 09.00 Basis: **Wet Weight**
 Seq Number: 3100175

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	08.29.19 15.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.29.19 15.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	08.29.19 15.29	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	08.29.19 15.29	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	08.29.19 15.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	08.29.19 15.29	
o-Terphenyl	84-15-1	96	%	70-135	08.29.19 15.29	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS35**
Lab Sample Id: 635446-020

Matrix: Soil
Date Collected: 08.28.19 10.25

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.29.19 08.00

Basis: Wet Weight

Seq Number: 3100240

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	08.29.19 14.41	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	08.29.19 14.41	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	08.29.19 14.41	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	08.29.19 14.41	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	08.29.19 14.41	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	08.29.19 14.41	U	1
Total BTEX		<0.00100	0.00100	mg/kg	08.29.19 14.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	08.29.19 14.41		
1,4-Difluorobenzene	540-36-3	108	%	70-130	08.29.19 14.41		



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS36** Matrix: Soil Date Received: 08.28.19 16.42
 Lab Sample Id: 635446-021 Date Collected: 08.28.19 10.30 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.29.19 12.00 Basis: Wet Weight
 Seq Number: 3100197

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	54.5	9.92	mg/kg	08.29.19 15.27		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.29.19 09.00 Basis: Wet Weight
 Seq Number: 3100175

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	08.29.19 16.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.29.19 16.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	08.29.19 16.11	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	08.29.19 16.11	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	08.29.19 16.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	08.29.19 16.11	
o-Terphenyl	84-15-1	97	%	70-135	08.29.19 16.11	



Certificate of Analytical Results 635446

LT Environmental, Inc., Arvada, CO

Remuda 25 OBS well #1

Sample Id: **FS36**
Lab Sample Id: 635446-021

Matrix: Soil
Date Collected: 08.28.19 10.30

Date Received: 08.28.19 16.42
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.29.19 08.00

Basis: Wet Weight

Seq Number: 3100240

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	08.29.19 15.41	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	08.29.19 15.41	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	08.29.19 15.41	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	08.29.19 15.41	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	08.29.19 15.41	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	08.29.19 15.41	U	1
Total BTEX		<0.00100	0.00100	mg/kg	08.29.19 15.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.29.19 15.41		
4-Bromofluorobenzene	460-00-4	108	%	70-130	08.29.19 15.41		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 OBS well #1

Analytical Method: Chloride by EPA 300

Seq Number: 3100054

MB Sample Id: 7685206-1-BLK

Matrix: Solid

LCS Sample Id: 7685206-1-BKS

Prep Method: E300P

Date Prep: 08.28.19

LCSD Sample Id: 7685206-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	258	103	261	104	80-120	1	20	mg/kg	08.29.19 09:30	

Analytical Method: Chloride by EPA 300

Seq Number: 3100197

MB Sample Id: 7685207-1-BLK

Matrix: Solid

LCS Sample Id: 7685207-1-BKS

Prep Method: E300P

Date Prep: 08.29.19

LCSD Sample Id: 7685207-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	266	106	267	107	80-120	0	20	mg/kg	08.29.19 14:50	

Analytical Method: Chloride by EPA 300

Seq Number: 3100054

Parent Sample Id: 635441-001

Matrix: Soil

MS Sample Id: 635441-001 S

Prep Method: E300P

Date Prep: 08.28.19

MSD Sample Id: 635441-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	843	1990	3020	109	3140	115	80-120	4	20	mg/kg	08.29.19 10:05	

Analytical Method: Chloride by EPA 300

Seq Number: 3100054

Parent Sample Id: 635446-011

Matrix: Solid

MS Sample Id: 635446-011 S

Prep Method: E300P

Date Prep: 08.28.19

MSD Sample Id: 635446-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	32.2	200	242	105	250	109	80-120	3	20	mg/kg	08.29.19 13:22	

Analytical Method: Chloride by EPA 300

Seq Number: 3100197

Parent Sample Id: 635446-019

Matrix: Soil

MS Sample Id: 635446-019 S

Prep Method: E300P

Date Prep: 08.29.19

MSD Sample Id: 635446-019 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	24.1	199	234	105	245	111	80-120	5	20	mg/kg	08.29.19 15:09	

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.

Remuda 25 OBS well #1

Analytical Method: Chloride by EPA 300

Seq Number: 3100197

Parent Sample Id: 635590-001

Matrix: Solid

MS Sample Id: 635590-001 S

Prep Method: E300P

Date Prep: 08.29.19

MSD Sample Id: 635590-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	52.5	199	273	111	291	119	80-120	6	20	mg/kg	08.29.19 19:22	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100015

MB Sample Id: 7685258-1-BLK

Matrix: Solid

LCS Sample Id: 7685258-1-BKS

Prep Method: SW8015P

Date Prep: 08.28.19

LCSD Sample Id: 7685258-1-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)	<25.0	1000	1100	110	1100	110	70-135	0	35	mg/kg	08.28.19 11:32	
Diesel Range Organics (DRO)	<9.88	1000	983	98	1040	104	70-135	6	35	mg/kg	08.28.19 11:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	110		111		116		70-135	%	08.28.19 11:32
o-Terphenyl	94		101		106		70-135	%	08.28.19 11:32

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100175

MB Sample Id: 7685363-1-BLK

Matrix: Solid

LCS Sample Id: 7685363-1-BKS

Prep Method: SW8015P

Date Prep: 08.29.19

LCSD Sample Id: 7685363-1-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)	<9.88	1000	1040	104	1040	104	70-135	0	35	mg/kg	08.29.19 11:03	
Diesel Range Organics (DRO)	<9.88	1000	1040	104	1030	103	70-135	1	35	mg/kg	08.29.19 11:03	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		122		128		70-135	%	08.29.19 11:03
o-Terphenyl	95		114		115		70-135	%	08.29.19 11:03

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100015

Parent Sample Id: 635441-001

Matrix: Soil

MS Sample Id: 635441-001 S

Prep Method: SW8015P

Date Prep: 08.28.19

MSD Sample Id: 635441-001 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)	<9.83	995	991	100	978	98	70-135	1	35	mg/kg	08.28.19 18:14	
Diesel Range Organics (DRO)	58.2	995	1030	98	1000	94	70-135	3	35	mg/kg	08.28.19 18:14	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		110		70-135	%	08.28.19 18:14
o-Terphenyl	110		103		70-135	%	08.28.19 18:14

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.

Remuda 25 OBS well #1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100175

Parent Sample Id: 635446-011

Matrix: Soil

MS Sample Id: 635446-011 S

Prep Method: SW8015P

Date Prep: 08.29.19

MSD Sample Id: 635446-011 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)	<9.81	993	1030	104	1020	103	70-135	1	35	mg/kg	08.29.19 12:04	
Diesel Range Organics (DRO)	<9.81	993	1030	104	1020	103	70-135	1	35	mg/kg	08.29.19 12:04	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		125		70-135	%	08.29.19 12:04
o-Terphenyl	115		113		70-135	%	08.29.19 12:04

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100009

MB Sample Id: 7685249-1-BLK

Matrix: Solid

LCS Sample Id: 7685249-1-BKS

Prep Method: SW5030B

Date Prep: 08.28.19

LCSD Sample Id: 7685249-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0846	85	0.0921	92	70-130	8	35	mg/kg	08.28.19 11:54	
Toluene	<0.00100	0.100	0.0914	91	0.100	100	70-130	9	35	mg/kg	08.28.19 11:54	
Ethylbenzene	<0.000500	0.100	0.105	105	0.114	114	71-129	8	35	mg/kg	08.28.19 11:54	
m,p-Xylenes	<0.00100	0.200	0.216	108	0.238	119	70-135	10	35	mg/kg	08.28.19 11:54	
o-Xylene	<0.00100	0.100	0.107	107	0.117	117	71-133	9	35	mg/kg	08.28.19 11:54	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		102		101		70-130	%	08.28.19 11:54
4-Bromofluorobenzene	117		118		117		70-130	%	08.28.19 11:54

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100240

MB Sample Id: 7685412-1-BLK

Matrix: Solid

LCS Sample Id: 7685412-1-BKS

Prep Method: SW5030B

Date Prep: 08.29.19

LCSD Sample Id: 7685412-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0944	94	0.0960	96	70-130	2	35	mg/kg	08.29.19 09:42	
Toluene	<0.00100	0.100	0.103	103	0.103	103	70-130	0	35	mg/kg	08.29.19 09:42	
Ethylbenzene	<0.000500	0.100	0.117	117	0.117	117	71-129	0	35	mg/kg	08.29.19 09:42	
m,p-Xylenes	<0.00100	0.200	0.240	120	0.239	120	70-135	0	35	mg/kg	08.29.19 09:42	
o-Xylene	<0.000500	0.100	0.119	119	0.120	120	71-133	1	35	mg/kg	08.29.19 09:42	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		108		113		70-130	%	08.29.19 09:42
4-Bromofluorobenzene	99		118		125		70-130	%	08.29.19 09:42

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

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

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

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



LT Environmental, Inc.

Remuda 25 OBS well #1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100009

Parent Sample Id: 635441-001

Matrix: Soil

MS Sample Id: 635441-001 S

Prep Method: SW5030B

Date Prep: 08.28.19

MSD Sample Id: 635441-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0804	80	0.0810	80	70-130	1	35	mg/kg	08.28.19 17:35	
Toluene	<0.00100	0.100	0.0819	82	0.0801	79	70-130	2	35	mg/kg	08.28.19 17:35	
Ethylbenzene	<0.00100	0.100	0.0812	81	0.0783	78	71-129	4	35	mg/kg	08.28.19 17:35	
m,p-Xylenes	<0.00100	0.201	0.165	82	0.160	80	70-135	3	35	mg/kg	08.28.19 17:35	
o-Xylene	<0.000502	0.100	0.0824	82	0.0794	79	71-133	4	35	mg/kg	08.28.19 17:35	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	118		119		70-130	%	08.28.19 17:35
4-Bromofluorobenzene	117		117		70-130	%	08.28.19 17:35

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100240

Parent Sample Id: 635446-011

Matrix: Soil

MS Sample Id: 635446-011 S

Prep Method: SW5030B

Date Prep: 08.29.19

MSD Sample Id: 635446-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000994	0.0994	0.0914	92	0.0899	90	70-130	2	35	mg/kg	08.29.19 10:22	
Toluene	<0.000497	0.0994	0.0973	98	0.0951	96	70-130	2	35	mg/kg	08.29.19 10:22	
Ethylbenzene	<0.000497	0.0994	0.108	109	0.106	107	71-129	2	35	mg/kg	08.29.19 10:22	
m,p-Xylenes	<0.000994	0.199	0.223	112	0.217	109	70-135	3	35	mg/kg	08.29.19 10:22	
o-Xylene	<0.000994	0.0994	0.113	114	0.109	110	71-133	4	35	mg/kg	08.29.19 10:22	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	121		114		70-130	%	08.29.19 10:22
4-Bromofluorobenzene	122		119		70-130	%	08.29.19 10:22

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: 635446

Houston, TX (281) 240-4200 Dallas, TX (214) 802-0300 San Antonio, TX (210) 508-3334
 Midland, TX (432-704-5440) El Paso, TX (915) 565-3443 Lubbock, TX (806) 794-1286
 Hobbs, NM (575-362-7550) Phoenix, AZ (480-355-0800) Atlanta, GA (770-448-8900) Tampa, FL (813-820-2000)

www.xenco.com

Page 1 of 3

Project Manager:	Dan Moore	Bill to: (if different)	Kyle Littel
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:	dmoores@ltenv.com

ANALYSIS REQUEST

Work Order Notes

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:	Kenwick 25 Oil Well #1	Turn Around	☐
Project Number:	2 RP-5309	Rush:	3 days
P.O. Number:		Due Date:	
Sampler's Name:	Robert McAlfee		

SAMPLE RECEIPT	Temp Blank	Yes	No	Wet Ice	Yes	No
Temperature (°C):	2.6	Thermometer ID: T110007				
Received Inlet:	Yes	No	Correction Factor: -0.2			
Cooler Custody Seal:	Yes	No	Total Containers: 21			
Sample Custody Seal:	Yes	No				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (%)	BTEX	Chloride	Sample Comments									
F S12	S	08/29/19	0925	3'	1	X	X	X	Composite									
F S17			0930	3'		X	X	X										
F S18			0940	4'		X	X	X										
F S19			1020	1.5'		X	X	X										
F S20			1030	3'		X	X	X										
F S21			1045	2'		X	X	X										
F S22			1050	2'		X	X	X										
F S23			1100	2'		X	X	X										
F S24		08/28/19	0930	2'		X	X	X										
F S25		08/28/19	0935	2'		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
		8/28/19 16:42			



Chain of Custody

Work Order No:

635446

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) 794-1286
 Hobbs, NM (575) 392-7550 Phoenix, AZ (480) 355-0800 Atlanta, GA (770) 448-8000 Tampa, FL (813) 620-2000

www.xenco.com

Page 2 of 3

Project Manager:	Dan Mott	Bill to: (if different)	Kyle Littlefield
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:	dmott@xenco.com kmlittlefield@xtoenergy.com

Program: ☐ USTRST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund State of Project:	
Reporting Level: ☐ Level I ☐ Level II ☐ Level III ☐ Level IV	Deliverables: ☐ EDD ☐ ADAPT ☐ Other:

Project Name:	Kennerda 25 Oil well #1	Turn Around	
Project Number:	289-5309	Routing	☐
P.O. Number:		Route:	3 days
Sampler's Name:	Robert McAtee	Due Date:	

Sample Identification						Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Sample Comments									
FS26						S	08/28/19	0940	2'	1	X	X	X	Composite									
FS27								0945			X	X	X										
FS28								0950			X	X	X										
FS29								0955			X	X	X										
FS30								1000			X	X	X										
FS31								1005			X	X	X										
FS32								1010			X	X	X										
FS33								1015			X	X	X										
FS34								1020			X	X	X										
FS35								1025			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 8010: 8RCRA SB As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U		1631 / 245.1 / 7470 / 7471: Hg

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. Taste 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>	8/28/19 10:42			

Work Order No:

63544

Houston, TX (281) 240-4200 Dallas, TX (214) 502-0000 San Antonio, TX (210) 509-3333
Midland, TX (432-704-5440) El Paso, TX (915) 665-3443 Lubbock, TX (806) 794-1296
Hedberg, NM (505-382-7550) Phoenix, AZ (480-385-0900) Atlanta, GA (770-449-8800) Tampa, FL (813)

www.xetico.com

Page _____ of _____

Project Manager:	Don Mair	Bill to: (if different)	Kyle Litke
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:	dmair@ltenv.com mcafee@ltenv.com

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

Project Name:		Turn Around	ANALYSIS REQUEST						Work Order Notes
Project Number:	Kensada 25 Obs with #1	Routine ☐							
P.O. Number:	ZLP-5309	Rush: 3day							
Sampler's Name:	Robert McAfee	Due Date:							

SAMPLE RECEIPT					
Temp Blank:	Yes	No	Met Ice:	Yes	No
Temperature (°C):					
Received intact:	Yes	No	-7 Temperature ID		
Cooler Custody Seals:	Yes	No	N/A	Correction Factor:	
Sample Custody Seals:	Yes	No	N/A	Total Containers:	

Number of Containers

EPA 8015)

EPA 8-8021)

(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 (E)	BTEX (C)	Chloride	Sample Comments
F536	S	08/28/19	1030	2'	1	X	X	X	Composite

	200.7 / 6010	200.8 / 6020:
6RCRA	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:	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Tl	Hg
																	1631 / 245.1 / 7470 / 7471

See: [Growth](#) of this document and [refinement](#) of [taxonomy](#) considers a value [membership](#) order from [client](#) community to [Kern](#). Its [affiliates](#) and [sub-connections](#). It [assesses](#) [standard](#) [terms](#) and [conditions](#).

service. Karmco 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 Karmco. Karmco makes no warranty, expressed or implied, as to the accuracy or completeness of any data or information provided by the client.

NOTE: A maximum charge of \$7500 will be charged to each project and a charge of \$5.00 for each sample submitted to Xeno, but not analyzed. These terms will be enforced unless previously negotiated.

[illegible][illegible][illegible][illegible][illegible]



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 08/28/2019 04:42:00 PM

Work Order #: 635446

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T NM 007

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	No
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Martha Castro

Date: 08/28/2019

Checklist reviewed by:

Jessica Kramer

Date: 08/29/2019

Analytical Report 635710

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda 25 Obs Well #1

04-SEP-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

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

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



04-SEP-19

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

Reference: XENCO Report No(s): **635710**
Remuda 25 Obs Well #1
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 635710. 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. 635710 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer
Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS37	S	08-29-19 10:30	4 ft	635710-001
FS38	S	08-29-19 10:35	4 ft	635710-002
FS39	S	08-29-19 10:40	4 ft	635710-003
FS40	S	08-29-19 10:50	4 ft	635710-004
FS41	S	08-29-19 10:55	4 ft	635710-005
FS42	S	08-29-19 13:15	4.5 ft	635710-006
FS43	S	08-29-19 13:20	4 ft	635710-007
FS44	S	08-29-19 13:30	4 ft	635710-008
FS45	S	08-29-19 13:35	4 ft	635710-009
FS46	S	08-29-19 13:10	4 ft	635710-010
FS47	S	08-29-19 13:15	4 ft	635710-011
FS48	S	08-29-19 13:20	4 ft	635710-012
FS49	S	08-29-19 13:25	5 ft	635710-013
FS50	S	08-29-19 13:30	5 ft	635710-014
FS51	S	08-29-19 13:35	4 ft	635710-015
FS52	S	08-29-19 13:40	4 ft	635710-016
FS53	S	08-30-19 10:35	4 ft	635710-017
FS54	S	08-30-19 10:40	4.5 ft	635710-018
FS55	S	08-30-19 10:45	4.5 ft	635710-019
FS56	S	08-30-19 11:45	4 ft	635710-020
FS57	S	08-30-19 11:50	4 ft	635710-021
FS58	S	08-30-19 11:55	4 ft	635710-022
FS59	S	08-30-19 12:00	4.5 ft	635710-023
FS60	S	08-30-19 12:05	4 ft	635710-024
FS61	S	08-30-19 12:10	4 ft	635710-025
FS62	S	08-30-19 12:50	4 ft	635710-026
FS63	S	08-30-19 12:55	4.5 ft	635710-027
FS64	S	08-30-19 13:00	5 ft	635710-028
FS65	S	08-30-19 13:05	5 ft	635710-029
FS66	S	08-30-19 13:10	5 ft	635710-030
FS67	S	08-30-19 13:15	4.5 ft	635710-031

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: Remuda 25 Obs Well #1**

Project ID:
Work Order Number(s): 635710

Report Date: 04-SEP-19
Date Received: 08/30/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3100260 BTEX by EPA 8021B

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

Batch: LBA-3100263 BTEX by EPA 8021B

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

Batch: LBA-3100431 TPH by SW8015 Mod

Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 635710-013,635710-014,635710-021.

Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 635710-015,635710-018,635710-020,635710-021.

Batch: LBA-3100461 TPH by SW8015 Mod

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

Samples affected are: 635710-025 SD.

Batch: LBA-3100475 BTEX by EPA 8021B

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



Certificate of Analysis Summary 635710

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Aug-30-19 04:10 pm

Report Date: 04-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	635710-001	635710-002	635710-003	635710-004	635710-005	635710-006
	<i>Field Id:</i>	FS37	FS38	FS39	FS40	FS41	FS42
	<i>Depth:</i>	4- ft	4- ft	4- ft	4- ft	4- ft	4.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-29-19 10:30	Aug-29-19 10:35	Aug-29-19 10:40	Aug-29-19 10:50	Aug-29-19 10:55	Aug-29-19 13:15
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-03-19 09:00	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30
	<i>Analyzed:</i>	Sep-03-19 15:22	Aug-30-19 22:11	Aug-30-19 22:31	Aug-30-19 22:50	Aug-31-19 01:28	Aug-31-19 01:48
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00101 0.00101	<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.000992 0.000992	<0.00100 0.00100
Toluene		<0.00101 0.00101	<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.000992 0.000992	<0.00100 0.00100
Ethylbenzene		<0.00101 0.00101	<0.00100 0.00100	0.00116 0.000994	0.00107 0.00101	<0.000992 0.000992	0.00133 0.00100
m,p-Xylenes		<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	0.00271 0.00202	<0.00198 0.00198	0.00573 0.00200
o-Xylene		<0.00101 0.00101	<0.00100 0.00100	<0.000994 0.000994	0.00299 0.00101	<0.000992 0.000992	0.00211 0.00100
Total Xylenes		<0.00101 0.00101	<0.00100 0.00100	<0.000994 0.000994	0.00570 0.00101	<0.000992 0.000992	0.00784 0.00100
Total BTEX		<0.00101 0.00101	<0.00100 0.00100	0.00116 0.000994	0.00677 0.00101	<0.000992 0.000992	0.00917 0.00100
Chloride by EPA 300	<i>Extracted:</i>	Aug-30-19 17:08	Aug-30-19 17:08	Aug-30-19 17:08	Aug-30-19 17:08	Aug-30-19 17:08	Aug-30-19 17:08
	<i>Analyzed:</i>	Aug-30-19 19:27	Aug-30-19 19:46	Aug-30-19 19:52	Aug-30-19 19:58	Aug-30-19 20:04	Aug-30-19 20:23
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<9.84 9.84	<9.98 9.98	<9.82 9.82	<9.94 9.94	<9.92 9.92	69.9 10.0
TPH by SW8015 Mod	<i>Extracted:</i>	Aug-30-19 16:44	Aug-30-19 16:44	Aug-30-19 16:44	Aug-30-19 16:44	Aug-30-19 17:30	Aug-30-19 17:30
	<i>Analyzed:</i>	Aug-30-19 20:44	Aug-30-19 21:04	Aug-30-19 21:24	Aug-30-19 21:44	Sep-03-19 19:16	Sep-03-19 20:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<25.1 25.1	<24.9 24.9	<25.1 25.1	<25.0 25.0	<24.9 24.9	<25.1 25.1
Diesel Range Organics (DRO)		<25.1 25.1	<24.9 24.9	<25.1 25.1	133 25.0	<24.9 24.9	319 25.1
Motor Oil Range Hydrocarbons (MRO)		<25.1 25.1	<24.9 24.9	<25.1 25.1	<25.0 25.0	<24.9 24.9	<25.1 25.1
Total TPH		<25.1 25.1	<24.9 24.9	<25.1 25.1	133 25.0	<24.9 24.9	319 25.1
Total GRO-DRO		<25.1 25.1	<24.9 24.9	<25.1 25.1	133 25.0	<24.9 24.9	319 25.1

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

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 635710

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Aug-30-19 04:10 pm

Report Date: 04-SEP-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	635710-007	635710-008	635710-009	635710-010	635710-011	635710-012
	Field Id:	FS43	FS44	FS45	FS46	FS47	FS48
	Depth:	4- ft	4- ft	4- ft	4- ft	4- ft	4- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Aug-29-19 13:20	Aug-29-19 13:30	Aug-29-19 13:35	Aug-29-19 13:10	Aug-29-19 13:15	Aug-29-19 13:20
BTEX by EPA 8021B	Extracted:	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30
	Analyzed:	Aug-31-19 02:08	Aug-31-19 02:27	Aug-31-19 02:47	Aug-31-19 03:07	Aug-31-19 03:27	Aug-31-19 03:47
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000994 0.000994	<0.00101 0.00101	<0.000992 0.000992	<0.00101 0.00101	<0.00101 0.00101	<0.100 0.100
Toluene		<0.000994 0.000994	<0.00101 0.00101	<0.000992 0.000992	<0.00101 0.00101	<0.00101 0.00101	<0.100 0.100
Ethylbenzene		<0.000994 0.000994	<0.00101 0.00101	<0.000992 0.000992	<0.00101 0.00101	0.00115 0.00101	0.176 0.100
m,p-Xylenes		<0.00199 0.00199	<0.00202 0.00202	<0.00198 0.00198	0.00412 0.00201	<0.00203 0.00203	1.27 0.200
o-Xylene		<0.000994 0.000994	<0.00101 0.00101	<0.000992 0.000992	0.00172 0.00101	<0.00101 0.00101	0.728 0.100
Total Xylenes		<0.000994 0.000994	<0.00101 0.00101	<0.000992 0.000992	0.00584 0.00101	<0.00101 0.00101	2.00 0.100
Total BTEX		<0.000994 0.000994	<0.00101 0.00101	<0.000992 0.000992	0.00584 0.00101	0.00115 0.00101	2.17 0.100
Chloride by EPA 300	Extracted:	Aug-30-19 17:08	Aug-30-19 17:08	Aug-30-19 17:08	Aug-30-19 17:08	Aug-30-19 17:08	Aug-30-19 17:08
	Analyzed:	Aug-30-19 20:29	Aug-30-19 20:36	Aug-30-19 20:42	Aug-30-19 20:48	Aug-30-19 20:54	Aug-30-19 21:13
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<9.88 9.88	<9.98 9.98	13.2 9.98	13.7 9.90	17.6 10.0	24.4 9.88
TPH by SW8015 Mod	Extracted:	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30
	Analyzed:	Sep-03-19 20:36	Sep-03-19 20:56	Sep-03-19 21:16	Sep-03-19 21:36	Sep-03-19 21:56	Sep-03-19 22:17
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<25.0 25.0	<25.1 25.1	<24.9 24.9	<25.1 25.1	<25.1 25.1	157 25.1
Diesel Range Organics (DRO)		<25.0 25.0	<25.1 25.1	<24.9 24.9	<25.1 25.1	<25.1 25.1	997 25.1
Motor Oil Range Hydrocarbons (MRO)		<25.0 25.0	<25.1 25.1	<24.9 24.9	<25.1 25.1	<25.1 25.1	<25.1 25.1
Total TPH		<25.0 25.0	<25.1 25.1	<24.9 24.9	<25.1 25.1	<25.1 25.1	1150 25.1
Total GRO-DRO		<25.0 25.0	<25.1 25.1	<24.9 24.9	<25.1 25.1	<25.1 25.1	1150 25.1

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

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 635710

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Aug-30-19 04:10 pm

Report Date: 04-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	635710-013	635710-014	635710-015	635710-016	635710-017	635710-018
	<i>Field Id:</i>	FS49	FS50	FS51	FS52	FS53	FS54
	<i>Depth:</i>	5- ft	5- ft	4- ft	4- ft	4- ft	4.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-29-19 13:25	Aug-29-19 13:30	Aug-29-19 13:35	Aug-29-19 13:40	Aug-30-19 10:35	Aug-30-19 10:40
BTEX by EPA 8021B	<i>Extracted:</i>	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Sep-03-19 09:00
	<i>Analyzed:</i>	Aug-31-19 04:06	Aug-31-19 04:26	Aug-31-19 05:25	Aug-31-19 06:05	Aug-31-19 06:24	Sep-03-19 15:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.0992 0.0992	<0.100 0.100	<0.101 0.101	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101
Toluene		0.382 0.0992	<0.100 0.100	0.354 0.101	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101
Ethylbenzene		0.670 0.0992	0.191 0.100	0.673 0.101	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101
m,p-Xylenes		5.22 0.198	1.28 0.200	4.85 0.202	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202
o-Xylene		1.30 0.0992	0.844 0.100	2.84 0.101	<0.00101 0.00101	0.00102 0.00100	<0.00101 0.00101
Total Xylenes		6.52 0.0992	2.12 0.100	7.69 0.101	<0.00101 0.00101	0.00102 0.00100	<0.00101 0.00101
Total BTEX		7.57 0.0992	2.32 0.100	8.72 0.101	<0.00101 0.00101	0.00102 0.00100	<0.00101 0.00101
Chloride by EPA 300	<i>Extracted:</i>	Aug-30-19 17:08	Aug-30-19 17:08	Aug-30-19 17:08	Aug-30-19 17:08	Aug-30-19 17:08	Aug-30-19 17:08
	<i>Analyzed:</i>	Aug-30-19 21:32	Aug-30-19 21:38	Aug-30-19 21:45	Aug-30-19 21:52	Aug-30-19 21:58	Aug-30-19 22:04
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1970 99.2	541 50.0	11.6 9.94	38.9 9.98	414 20.0	362 19.8
TPH by SW8015 Mod	<i>Extracted:</i>	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30
	<i>Analyzed:</i>	Sep-03-19 22:37	Sep-03-19 22:56	Sep-03-19 23:37	Sep-03-19 23:57	Sep-04-19 00:17	Sep-04-19 00:37
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		244 25.0	115 24.9	345 25.1	<25.0 25.0	<25.0 25.0	<25.1 25.1
Diesel Range Organics (DRO)		1310 25.0	1080 24.9	1510 25.1	<25.0 25.0	<25.0 25.0	<25.1 25.1
Motor Oil Range Hydrocarbons (MRO)		<25.0 25.0	<24.9 24.9	<25.1 25.1	<25.0 25.0	<25.0 25.0	<25.1 25.1
Total TPH		1550 25.0	1200 24.9	1860 25.1	<25.0 25.0	<25.0 25.0	<25.1 25.1
Total GRO-DRO		1550 25.0	1200 24.9	1860 25.1	<25.0 25.0	<25.0 25.0	<25.1 25.1

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

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 635710

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Aug-30-19 04:10 pm

Report Date: 04-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	635710-019	635710-020	635710-021	635710-022	635710-023	635710-024
	<i>Field Id:</i>	FS55	FS56	FS57	FS58	FS59	FS60
	<i>Depth:</i>	4.5- ft	4- ft	4- ft	4- ft	4.5- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-30-19 10:45	Aug-30-19 11:45	Aug-30-19 11:50	Aug-30-19 11:55	Aug-30-19 12:00	Aug-30-19 12:05
BTEX by EPA 8021B	<i>Extracted:</i>	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30
	<i>Analyzed:</i>	Aug-31-19 07:04	Aug-31-19 07:23	Aug-31-19 07:43	Aug-31-19 08:22	Aug-31-19 08:42	Aug-31-19 09:02
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.100 0.100	<0.101 0.101	<0.0998 0.0998	<0.00101 0.00101	<0.00101 0.00101	<0.000996 0.000996
Toluene		<0.100 0.100	0.121 0.101	0.519 0.0998	<0.00101 0.00101	<0.00101 0.00101	<0.000996 0.000996
Ethylbenzene		0.103 0.100	0.295 0.101	1.06 0.0998	<0.00101 0.00101	<0.00101 0.00101	<0.000996 0.000996
m,p-Xylenes		0.903 0.201	1.79 0.202	7.58 0.200	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199
o-Xylene		0.228 0.100	1.21 0.101	2.59 0.0998	0.00160 0.00101	<0.00101 0.00101	<0.000996 0.000996
Total Xylenes		1.13 0.100	3.00 0.101	10.2 0.0998	0.00160 0.00101	<0.00101 0.00101	<0.000996 0.000996
Total BTEX		1.23 0.100	3.42 0.101	11.7 0.0998	0.00160 0.00101	<0.00101 0.00101	<0.000996 0.000996
Chloride by EPA 300	<i>Extracted:</i>	Aug-30-19 17:08	Aug-30-19 17:08	Sep-03-19 08:09	Sep-03-19 08:09	Sep-03-19 08:09	Sep-03-19 08:09
	<i>Analyzed:</i>	Aug-30-19 22:10	Aug-30-19 22:17	Sep-03-19 10:22	Sep-03-19 10:40	Sep-03-19 10:45	Sep-03-19 10:51
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1450 99.8	536 49.9	792 49.5	529 19.9	501 19.6	574 50.1
TPH by SW8015 Mod	<i>Extracted:</i>	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30	Aug-30-19 17:30
	<i>Analyzed:</i>	Sep-04-19 00:57	Sep-04-19 01:17	Sep-04-19 01:38	Sep-04-19 01:57	Sep-04-19 02:18	Sep-04-19 02:38
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		99.2 24.9	137 24.9	779 25.1	<25.1 25.1	<24.9 24.9	<25.1 25.1
Diesel Range Organics (DRO)		763 24.9	800 24.9	2650 25.1	<25.1 25.1	<24.9 24.9	<25.1 25.1
Motor Oil Range Hydrocarbons (MRO)		<24.9 24.9	<24.9 24.9	<25.1 25.1	<25.1 25.1	<24.9 24.9	<25.1 25.1
Total TPH		862 24.9	937 24.9	3430 25.1	<25.1 25.1	<24.9 24.9	<25.1 25.1
Total GRO-DRO		862 24.9	937 24.9	3430 25.1	<25.1 25.1	<24.9 24.9	<25.1 25.1

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

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 635710

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Aug-30-19 04:10 pm

Report Date: 04-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	635710-025	635710-026	635710-027	635710-028	635710-029	635710-030
	<i>Field Id:</i>	FS61	FS62	FS63	FS64	FS65	FS66
	<i>Depth:</i>	4- ft	4- ft	4.5- ft	5- ft	5- ft	5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-30-19 12:10	Aug-30-19 12:50	Aug-30-19 12:55	Aug-30-19 13:00	Aug-30-19 13:05	Aug-30-19 13:10
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-03-19 09:00	Sep-03-19 09:00	Sep-03-19 09:00	Sep-03-19 09:00	Sep-03-19 09:00	Sep-03-19 09:00
	<i>Analyzed:</i>	Sep-03-19 16:01	Sep-03-19 17:21	Sep-03-19 16:21	Sep-03-19 16:41	Sep-03-19 17:41	Sep-03-19 18:01
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.0996 0.0996	<0.000994 0.000994	<0.00101 0.00101	<0.100 0.100	<0.100 0.100
Toluene		0.00107 0.00100	0.544 0.0996	<0.000994 0.000994	<0.00101 0.00101	3.95 0.100	0.974 0.100
Ethylbenzene		0.00816 0.00100	1.07 0.0996	<0.000994 0.000994	<0.00101 0.00101	3.14 0.100	1.25 0.100
m,p-Xylenes		0.0440 0.00200	5.59 0.199	<0.00199 0.00199	<0.00201 0.00201	22.3 0.200	7.15 0.200
o-Xylene		0.0388 0.00100	2.91 0.0996	<0.000994 0.000994	<0.00101 0.00101	6.54 0.100	3.90 0.100
Total Xylenes		0.0828 0.00100	8.50 0.0996	<0.000994 0.000994	<0.00101 0.00101	28.8 0.100	11.1 0.100
Total BTEX		0.0920 0.00100	10.1 0.0996	<0.000994 0.000994	<0.00101 0.00101	35.9 0.100	13.3 0.100
Chloride by EPA 300	<i>Extracted:</i>	Sep-03-19 08:09	Sep-03-19 08:09	Sep-03-19 08:09	Sep-03-19 08:09	Sep-03-19 08:09	Sep-03-19 08:09
	<i>Analyzed:</i>	Sep-03-19 10:57	Sep-03-19 11:14	Sep-03-19 11:20	Sep-03-19 11:26	Sep-03-19 11:32	Sep-03-19 11:37
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		825 49.5	218 19.6	322 20.0	1140 D 99.0	3200 D 197	514 19.8
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-03-19 09:00	Sep-03-19 09:00	Sep-03-19 09:00	Sep-03-19 09:00	Sep-03-19 09:00	Sep-03-19 09:00
	<i>Analyzed:</i>	Sep-03-19 14:56	Sep-03-19 15:56	Sep-03-19 16:16	Sep-03-19 16:36	Sep-03-19 16:56	Sep-03-19 17:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<25.1 25.1	127 25.1	<25.1 25.1	<25.0 25.0	157 25.1	141 25.1
Diesel Range Organics (DRO)		270 25.1	1100 25.1	<25.1 25.1	<25.0 25.0	1070 25.1	1150 25.1
Motor Oil Range Hydrocarbons (MRO)		<25.1 25.1	<25.1 25.1	<25.1 25.1	<25.0 25.0	<25.1 25.1	<25.1 25.1
Total GRO-DRO		270 25.1	1230 25.1	<25.1 25.1	<25.0 25.0	1230 25.1	1290 25.1
Total TPH		270 25.1	1230 25.1	<25.1 25.1	<25.0 25.0	1230 25.1	1290 25.1

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

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 635710

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Aug-30-19 04:10 pm

Report Date: 04-SEP-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	635710-031					
	Field Id:	FS67					
	Depth:	4.5- ft					
	Matrix:	SOIL					
	Sampled:	Aug-30-19 13:15					
BTEX by EPA 8021B	Extracted:	Sep-03-19 09:00					
	Analyzed:	Sep-03-19 17:01					
	Units/RL:	mg/kg RL					
Benzene		<0.00101 0.00101					
Toluene		<0.00101 0.00101					
Ethylbenzene		<0.00101 0.00101					
m,p-Xylenes		<0.00202 0.00202					
o-Xylene		<0.00101 0.00101					
Total Xylenes		<0.00101 0.00101					
Total BTEX		<0.00101 0.00101					
Chloride by EPA 300	Extracted:	Sep-03-19 08:09					
	Analyzed:	Sep-03-19 11:43					
	Units/RL:	mg/kg RL					
Chloride		337 19.8					
TPH by SW8015 Mod	Extracted:	Sep-03-19 09:00					
	Analyzed:	Sep-03-19 17:36					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<25.1 25.1					
Diesel Range Organics (DRO)		<25.1 25.1					
Motor Oil Range Hydrocarbons (MRO)		<25.1 25.1					
Total GRO-DRO		<25.1 25.1					
Total TPH		<25.1 25.1					

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 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS37**
Lab Sample Id: 635710-001

Matrix: Soil
Date Collected: 08.29.19 10.30

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100259

Date Prep: 08.30.19 17.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.84	9.84	mg/kg	08.30.19 19.27	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100262

Date Prep: 08.30.19 16.44

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	08.30.19 20.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	08.30.19 20.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	08.30.19 20.44	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	08.30.19 20.44	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	08.30.19 20.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	127	%	70-135	08.30.19 20.44	
o-Terphenyl	84-15-1	115	%	70-135	08.30.19 20.44	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS37**
Lab Sample Id: 635710-001

Matrix: Soil
Date Collected: 08.29.19 10.30

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.03.19 09.00

Basis: Wet Weight

Seq Number: 3100475

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.03.19 15.22	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.03.19 15.22	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.03.19 15.22	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.03.19 15.22	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.03.19 15.22	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.03.19 15.22	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.03.19 15.22	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	70-130	09.03.19 15.22		
1,4-Difluorobenzene	540-36-3	108	%	70-130	09.03.19 15.22		



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS38**
Lab Sample Id: 635710-002

Matrix: Soil
Date Collected: 08.29.19 10.35

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100259

Date Prep: 08.30.19 17.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	08.30.19 19.46	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100262

Date Prep: 08.30.19 16.44

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	08.30.19 21.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	08.30.19 21.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	08.30.19 21.04	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	08.30.19 21.04	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	08.30.19 21.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	08.30.19 21.04	
o-Terphenyl	84-15-1	114	%	70-135	08.30.19 21.04	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS38**
Lab Sample Id: 635710-002

Matrix: Soil
Date Collected: 08.29.19 10.35

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100260

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	08.30.19 22.11	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	08.30.19 22.11	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	08.30.19 22.11	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	08.30.19 22.11	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	08.30.19 22.11	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	08.30.19 22.11	U	1
Total BTEX		<0.00100	0.00100	mg/kg	08.30.19 22.11	U	1
% Recovery							
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		129	%	70-130	08.30.19 22.11	
1,4-Difluorobenzene	540-36-3		116	%	70-130	08.30.19 22.11	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS39**
Lab Sample Id: 635710-003

Matrix: Soil
Date Collected: 08.29.19 10.40

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100259

Date Prep: 08.30.19 17.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.82	9.82	mg/kg	08.30.19 19.52	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100262

Date Prep: 08.30.19 16.44

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	08.30.19 21.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	08.30.19 21.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	08.30.19 21.24	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	08.30.19 21.24	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	08.30.19 21.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	127	%	70-135	08.30.19 21.24	
o-Terphenyl	84-15-1	113	%	70-135	08.30.19 21.24	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS39**
Lab Sample Id: 635710-003

Matrix: Soil
Date Collected: 08.29.19 10.40

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100260

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	08.30.19 22.31	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	08.30.19 22.31	U	1
Ethylbenzene	100-41-4	0.00116	0.000994	mg/kg	08.30.19 22.31		1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	08.30.19 22.31	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	08.30.19 22.31	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	08.30.19 22.31	U	1
Total BTEX		0.00116	0.000994	mg/kg	08.30.19 22.31		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118		%	70-130	08.30.19 22.31	
1,4-Difluorobenzene	540-36-3	104		%	70-130	08.30.19 22.31	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS40** Matrix: Soil Date Received: 08.30.19 16.10
 Lab Sample Id: 635710-004 Date Collected: 08.29.19 10.50 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.30.19 17.08 Basis: Wet Weight
 Seq Number: 3100259

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.94	9.94	mg/kg	08.30.19 19.58	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.30.19 16.44 Basis: Wet Weight
 Seq Number: 3100262

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	08.30.19 21.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	133	25.0	mg/kg	08.30.19 21.44		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	08.30.19 21.44	U	1
Total TPH	PHC635	133	25.0	mg/kg	08.30.19 21.44		1
Total GRO-DRO	PHC628	133	25.0	mg/kg	08.30.19 21.44		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	130	%	70-135	08.30.19 21.44	
o-Terphenyl	84-15-1	126	%	70-135	08.30.19 21.44	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS40**
Lab Sample Id: 635710-004

Matrix: Soil
Date Collected: 08.29.19 10.50

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DTH

Analyst: DTH

Seq Number: 3100260

Date Prep: 08.30.19 17.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	08.30.19 22.50	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	08.30.19 22.50	U	1
Ethylbenzene	100-41-4	0.00107	0.00101	mg/kg	08.30.19 22.50		1
m,p-Xylenes	179601-23-1	0.00271	0.00202	mg/kg	08.30.19 22.50		1
o-Xylene	95-47-6	0.00299	0.00101	mg/kg	08.30.19 22.50		1
Total Xylenes	1330-20-7	0.00570	0.00101	mg/kg	08.30.19 22.50		1
Total BTEX		0.00677	0.00101	mg/kg	08.30.19 22.50		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	113		%	70-130	08.30.19 22.50	
4-Bromofluorobenzene	460-00-4	127		%	70-130	08.30.19 22.50	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS41**
Lab Sample Id: 635710-005

Matrix: Soil
Date Collected: 08.29.19 10.55

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100259

Date Prep: 08.30.19 17.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.92	9.92	mg/kg	08.30.19 20.04	U	1

Analytical Method: TPH by SW8015 Mod

Tech: MAB

Analyst: DTH

Seq Number: 3100431

Date Prep: 08.30.19 17.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.03.19 19.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.03.19 19.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.03.19 19.16	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.03.19 19.16	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.03.19 19.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	09.03.19 19.16	
o-Terphenyl	84-15-1	112	%	70-135	09.03.19 19.16	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS41**
Lab Sample Id: 635710-005

Matrix: Soil
Date Collected: 08.29.19 10.55

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000992	0.000992	mg/kg	08.31.19 01.28	U	1
Toluene	108-88-3	<0.000992	0.000992	mg/kg	08.31.19 01.28	U	1
Ethylbenzene	100-41-4	<0.000992	0.000992	mg/kg	08.31.19 01.28	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	08.31.19 01.28	U	1
o-Xylene	95-47-6	<0.000992	0.000992	mg/kg	08.31.19 01.28	U	1
Total Xylenes	1330-20-7	<0.000992	0.000992	mg/kg	08.31.19 01.28	U	1
Total BTEX		<0.000992	0.000992	mg/kg	08.31.19 01.28	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		102	%	70-130	08.31.19 01.28	
4-Bromofluorobenzene	460-00-4		108	%	70-130	08.31.19 01.28	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS42** Matrix: Soil Date Received: 08.30.19 16.10
 Lab Sample Id: 635710-006 Date Collected: 08.29.19 13.15 Sample Depth: 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.30.19 17.08 Basis: Wet Weight
 Seq Number: 3100259

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	69.9	10.0	mg/kg	08.30.19 20.23		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB % Moisture:
 Analyst: DTH Date Prep: 08.30.19 17.30 Basis: Wet Weight
 Seq Number: 3100431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.03.19 20.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	319	25.1	mg/kg	09.03.19 20.16		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.03.19 20.16	U	1
Total TPH	PHC635	319	25.1	mg/kg	09.03.19 20.16		1
Total GRO-DRO	PHC628	319	25.1	mg/kg	09.03.19 20.16		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	09.03.19 20.16	
o-Terphenyl	84-15-1	114	%	70-135	09.03.19 20.16	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS42**
Lab Sample Id: 635710-006

Matrix: Soil
Date Collected: 08.29.19 13.15

Date Received: 08.30.19 16.10
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	08.31.19 01.48	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	08.31.19 01.48	U	1
Ethylbenzene	100-41-4	0.00133	0.00100	mg/kg	08.31.19 01.48		1
m,p-Xylenes	179601-23-1	0.00573	0.00200	mg/kg	08.31.19 01.48		1
o-Xylene	95-47-6	0.00211	0.00100	mg/kg	08.31.19 01.48		1
Total Xylenes	1330-20-7	0.00784	0.00100	mg/kg	08.31.19 01.48		1
Total BTEX		0.00917	0.00100	mg/kg	08.31.19 01.48		1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		109	%	70-130	08.31.19 01.48	
4-Bromofluorobenzene	460-00-4		126	%	70-130	08.31.19 01.48	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS43**
Lab Sample Id: 635710-007

Matrix: Soil
Date Collected: 08.29.19 13.20

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100259

Date Prep: 08.30.19 17.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.88	9.88	mg/kg	08.30.19 20.29	U	1

Analytical Method: TPH by SW8015 Mod

Tech: MAB

Analyst: DTH

Seq Number: 3100431

Date Prep: 08.30.19 17.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.03.19 20.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.03.19 20.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.03.19 20.36	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.03.19 20.36	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.03.19 20.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	09.03.19 20.36	
o-Terphenyl	84-15-1	120	%	70-135	09.03.19 20.36	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS43**
Lab Sample Id: 635710-007

Matrix: Soil
Date Collected: 08.29.19 13.20

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	08.31.19 02.08	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	08.31.19 02.08	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	08.31.19 02.08	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	08.31.19 02.08	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	08.31.19 02.08	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	08.31.19 02.08	U	1
Total BTEX		<0.000994	0.000994	mg/kg	08.31.19 02.08	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	113		%	70-130	08.31.19 02.08	
1,4-Difluorobenzene	540-36-3	106		%	70-130	08.31.19 02.08	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS44** Matrix: Soil Date Received: 08.30.19 16.10
 Lab Sample Id: 635710-008 Date Collected: 08.29.19 13.30 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.30.19 17.08 Basis: Wet Weight
 Seq Number: 3100259

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	08.30.19 20.36	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB % Moisture:
 Analyst: DTH Date Prep: 08.30.19 17.30 Basis: Wet Weight
 Seq Number: 3100431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.03.19 20.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.03.19 20.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.03.19 20.56	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.03.19 20.56	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	09.03.19 20.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	09.03.19 20.56	
o-Terphenyl	84-15-1	132	%	70-135	09.03.19 20.56	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS44**
Lab Sample Id: 635710-008

Matrix: Soil
Date Collected: 08.29.19 13.30

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	08.31.19 02.27	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	08.31.19 02.27	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	08.31.19 02.27	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	08.31.19 02.27	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	08.31.19 02.27	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	08.31.19 02.27	U	1
Total BTEX		<0.00101	0.00101	mg/kg	08.31.19 02.27	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	70-130	08.31.19 02.27		
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.31.19 02.27		



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS45** Matrix: Soil Date Received: 08.30.19 16.10
 Lab Sample Id: 635710-009 Date Collected: 08.29.19 13.35 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.30.19 17.08 Basis: Wet Weight
 Seq Number: 3100259

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.2	9.98	mg/kg	08.30.19 20.42		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB % Moisture:
 Analyst: DTH Date Prep: 08.30.19 17.30 Basis: Wet Weight
 Seq Number: 3100431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.03.19 21.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.03.19 21.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.03.19 21.16	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.03.19 21.16	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.03.19 21.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	133	%	70-135	09.03.19 21.16	
o-Terphenyl	84-15-1	111	%	70-135	09.03.19 21.16	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS45**
Lab Sample Id: 635710-009

Matrix: Soil
Date Collected: 08.29.19 13.35

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000992	0.000992	mg/kg	08.31.19 02.47	U	1
Toluene	108-88-3	<0.000992	0.000992	mg/kg	08.31.19 02.47	U	1
Ethylbenzene	100-41-4	<0.000992	0.000992	mg/kg	08.31.19 02.47	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	08.31.19 02.47	U	1
o-Xylene	95-47-6	<0.000992	0.000992	mg/kg	08.31.19 02.47	U	1
Total Xylenes	1330-20-7	<0.000992	0.000992	mg/kg	08.31.19 02.47	U	1
Total BTEX		<0.000992	0.000992	mg/kg	08.31.19 02.47	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118		%	70-130	08.31.19 02.47	
1,4-Difluorobenzene	540-36-3	107		%	70-130	08.31.19 02.47	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS46** Matrix: Soil Date Received: 08.30.19 16.10
 Lab Sample Id: 635710-010 Date Collected: 08.29.19 13.10 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.30.19 17.08 Basis: Wet Weight
 Seq Number: 3100259

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.7	9.90	mg/kg	08.30.19 20.48		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB % Moisture:
 Analyst: DTH Date Prep: 08.30.19 17.30 Basis: Wet Weight
 Seq Number: 3100431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.03.19 21.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.03.19 21.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.03.19 21.36	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.03.19 21.36	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	09.03.19 21.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	09.03.19 21.36	
o-Terphenyl	84-15-1	99	%	70-135	09.03.19 21.36	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS46**
Lab Sample Id: 635710-010

Matrix: Soil
Date Collected: 08.29.19 13.10

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DTH

Analyst: DTH

Seq Number: 3100263

Date Prep: 08.30.19 17.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	08.31.19 03.07	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	08.31.19 03.07	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	08.31.19 03.07	U	1
m,p-Xylenes	179601-23-1	0.00412	0.00201	mg/kg	08.31.19 03.07		1
o-Xylene	95-47-6	0.00172	0.00101	mg/kg	08.31.19 03.07		1
Total Xylenes	1330-20-7	0.00584	0.00101	mg/kg	08.31.19 03.07		1
Total BTEX		0.00584	0.00101	mg/kg	08.31.19 03.07		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119	%	70-130	08.31.19 03.07		
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.31.19 03.07		



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS47**
Lab Sample Id: 635710-011

Matrix: Soil
Date Collected: 08.29.19 13.15

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100259

Date Prep: 08.30.19 17.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.6	10.0	mg/kg	08.30.19 20.54		1

Analytical Method: TPH by SW8015 Mod

Tech: MAB

Analyst: DTH

Seq Number: 3100431

Date Prep: 08.30.19 17.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.03.19 21.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.03.19 21.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.03.19 21.56	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.03.19 21.56	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	09.03.19 21.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	129	%	70-135	09.03.19 21.56	
o-Terphenyl	84-15-1	108	%	70-135	09.03.19 21.56	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS47**
Lab Sample Id: 635710-011

Matrix: Soil
Date Collected: 08.29.19 13.15

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	08.31.19 03.27	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	08.31.19 03.27	U	1
Ethylbenzene	100-41-4	0.00115	0.00101	mg/kg	08.31.19 03.27		1
m,p-Xylenes	179601-23-1	<0.00203	0.00203	mg/kg	08.31.19 03.27	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	08.31.19 03.27	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	08.31.19 03.27	U	1
Total BTEX		0.00115	0.00101	mg/kg	08.31.19 03.27		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104		%	70-130	08.31.19 03.27	
4-Bromofluorobenzene	460-00-4	107		%	70-130	08.31.19 03.27	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS48**
Lab Sample Id: 635710-012

Matrix: Soil
Date Collected: 08.29.19 13.20

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100259

Date Prep: 08.30.19 17.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.4	9.88	mg/kg	08.30.19 21.13		1

Analytical Method: TPH by SW8015 Mod

Tech: MAB

Analyst: DTH

Seq Number: 3100431

Date Prep: 08.30.19 17.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	157	25.1	mg/kg	09.03.19 22.17		1
Diesel Range Organics (DRO)	C10C28DRO	997	25.1	mg/kg	09.03.19 22.17		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.03.19 22.17	U	1
Total TPH	PHC635	1150	25.1	mg/kg	09.03.19 22.17		1
Total GRO-DRO	PHC628	1150	25.1	mg/kg	09.03.19 22.17		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	132	%	70-135	09.03.19 22.17	
o-Terphenyl	84-15-1	131	%	70-135	09.03.19 22.17	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS48**
Lab Sample Id: 635710-012

Matrix: Soil
Date Collected: 08.29.19 13.20

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.100	0.100	mg/kg	08.31.19 03.47	U	100
Toluene	108-88-3	<0.100	0.100	mg/kg	08.31.19 03.47	U	100
Ethylbenzene	100-41-4	0.176	0.100	mg/kg	08.31.19 03.47		100
m,p-Xylenes	179601-23-1	1.27	0.200	mg/kg	08.31.19 03.47		100
o-Xylene	95-47-6	0.728	0.100	mg/kg	08.31.19 03.47		100
Total Xylenes	1330-20-7	2.00	0.100	mg/kg	08.31.19 03.47		100
Total BTEX		2.17	0.100	mg/kg	08.31.19 03.47		100
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107		%	70-130	08.31.19 03.47	
4-Bromofluorobenzene	460-00-4	118		%	70-130	08.31.19 03.47	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS49** Matrix: Soil Date Received: 08.30.19 16.10
 Lab Sample Id: 635710-013 Date Collected: 08.29.19 13.25 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.30.19 17.08 Basis: Wet Weight
 Seq Number: 3100259

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1970	99.2	mg/kg	08.30.19 21.32		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB % Moisture:
 Analyst: DTH Date Prep: 08.30.19 17.30 Basis: Wet Weight
 Seq Number: 3100431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	244	25.0	mg/kg	09.03.19 22.37		1
Diesel Range Organics (DRO)	C10C28DRO	1310	25.0	mg/kg	09.03.19 22.37		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.03.19 22.37	U	1
Total TPH	PHC635	1550	25.0	mg/kg	09.03.19 22.37		1
Total GRO-DRO	PHC628	1550	25.0	mg/kg	09.03.19 22.37		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	135	%	70-135	09.03.19 22.37	
o-Terphenyl	84-15-1	137	%	70-135	09.03.19 22.37	**



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS49**
Lab Sample Id: 635710-013

Matrix: Soil
Date Collected: 08.29.19 13.25

Date Received: 08.30.19 16.10
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0992	0.0992	mg/kg	08.31.19 04.06	U	100
Toluene	108-88-3	0.382	0.0992	mg/kg	08.31.19 04.06		100
Ethylbenzene	100-41-4	0.670	0.0992	mg/kg	08.31.19 04.06		100
m,p-Xylenes	179601-23-1	5.22	0.198	mg/kg	08.31.19 04.06		100
o-Xylene	95-47-6	1.30	0.0992	mg/kg	08.31.19 04.06		100
Total Xylenes	1330-20-7	6.52	0.0992	mg/kg	08.31.19 04.06		100
Total BTEX		7.57	0.0992	mg/kg	08.31.19 04.06		100
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	122	%	70-130	08.31.19 04.06		
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.31.19 04.06		



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS50**
Lab Sample Id: 635710-014

Matrix: Soil
Date Collected: 08.29.19 13.30

Date Received: 08.30.19 16.10
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100259

Date Prep: 08.30.19 17.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	541	50.0	mg/kg	08.30.19 21.38		5

Analytical Method: TPH by SW8015 Mod

Tech: MAB

Analyst: DTH

Seq Number: 3100431

Date Prep: 08.30.19 17.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	115	24.9	mg/kg	09.03.19 22.56		1
Diesel Range Organics (DRO)	C10C28DRO	1080	24.9	mg/kg	09.03.19 22.56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.03.19 22.56	U	1
Total TPH	PHC635	1200	24.9	mg/kg	09.03.19 22.56		1
Total GRO-DRO	PHC628	1200	24.9	mg/kg	09.03.19 22.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	129	%	70-135	09.03.19 22.56	
o-Terphenyl	84-15-1	136	%	70-135	09.03.19 22.56	**



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS50**
Lab Sample Id: 635710-014

Matrix: Soil
Date Collected: 08.29.19 13.30

Date Received: 08.30.19 16.10
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.100	0.100	mg/kg	08.31.19 04.26	U	100
Toluene	108-88-3	<0.100	0.100	mg/kg	08.31.19 04.26	U	100
Ethylbenzene	100-41-4	0.191	0.100	mg/kg	08.31.19 04.26		100
m,p-Xylenes	179601-23-1	1.28	0.200	mg/kg	08.31.19 04.26		100
o-Xylene	95-47-6	0.844	0.100	mg/kg	08.31.19 04.26		100
Total Xylenes	1330-20-7	2.12	0.100	mg/kg	08.31.19 04.26		100
Total BTEX		2.32	0.100	mg/kg	08.31.19 04.26		100
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	08.31.19 04.26		
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.31.19 04.26		



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS51** Matrix: Soil Date Received: 08.30.19 16.10
 Lab Sample Id: 635710-015 Date Collected: 08.29.19 13.35 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.30.19 17.08 Basis: Wet Weight
 Seq Number: 3100259

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.6	9.94	mg/kg	08.30.19 21.45		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB % Moisture:
 Analyst: DTH Date Prep: 08.30.19 17.30 Basis: Wet Weight
 Seq Number: 3100431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	345	25.1	mg/kg	09.03.19 23.37		1
Diesel Range Organics (DRO)	C10C28DRO	1510	25.1	mg/kg	09.03.19 23.37		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.03.19 23.37	U	1
Total TPH	PHC635	1860	25.1	mg/kg	09.03.19 23.37		1
Total GRO-DRO	PHC628	1860	25.1	mg/kg	09.03.19 23.37		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	148	%	70-135	09.03.19 23.37	**
o-Terphenyl	84-15-1	108	%	70-135	09.03.19 23.37	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS51**
Lab Sample Id: 635710-015

Matrix: Soil
Date Collected: 08.29.19 13.35

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.101	0.101	mg/kg	08.31.19 05.25	U	100
Toluene	108-88-3	0.354	0.101	mg/kg	08.31.19 05.25		100
Ethylbenzene	100-41-4	0.673	0.101	mg/kg	08.31.19 05.25		100
m,p-Xylenes	179601-23-1	4.85	0.202	mg/kg	08.31.19 05.25		100
o-Xylene	95-47-6	2.84	0.101	mg/kg	08.31.19 05.25		100
Total Xylenes	1330-20-7	7.69	0.101	mg/kg	08.31.19 05.25		100
Total BTEX		8.72	0.101	mg/kg	08.31.19 05.25		100
% Recovery							
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		115	%	70-130	08.31.19 05.25	
4-Bromofluorobenzene	460-00-4		127	%	70-130	08.31.19 05.25	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: FS52
Lab Sample Id: 635710-016

Matrix: Soil
Date Collected: 08.29.19 13.40

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100259

Date Prep: 08.30.19 17.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	38.9	9.98	mg/kg	08.30.19 21.52		1

Analytical Method: TPH by SW8015 Mod

Tech: MAB

Analyst: DTH

Seq Number: 3100431

Date Prep: 08.30.19 17.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.03.19 23.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.03.19 23.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.03.19 23.57	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.03.19 23.57	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.03.19 23.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	09.03.19 23.57	
o-Terphenyl	84-15-1	110	%	70-135	09.03.19 23.57	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: FS52
Lab Sample Id: 635710-016

Matrix: Soil
Date Collected: 08.29.19 13.40

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	08.31.19 06.05	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	08.31.19 06.05	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	08.31.19 06.05	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	08.31.19 06.05	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	08.31.19 06.05	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	08.31.19 06.05	U	1
Total BTEX		<0.00101	0.00101	mg/kg	08.31.19 06.05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	08.31.19 06.05		
4-Bromofluorobenzene	460-00-4	114	%	70-130	08.31.19 06.05		



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: FS53
Lab Sample Id: 635710-017

Matrix: Soil
Date Collected: 08.30.19 10.35

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100259

Date Prep: 08.30.19 17.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	414	20.0	mg/kg	08.30.19 21.58		2

Analytical Method: TPH by SW8015 Mod

Tech: MAB

Analyst: DTH

Seq Number: 3100431

Date Prep: 08.30.19 17.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.04.19 00.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.04.19 00.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.04.19 00.17	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.04.19 00.17	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.04.19 00.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	134	%	70-135	09.04.19 00.17	
o-Terphenyl	84-15-1	112	%	70-135	09.04.19 00.17	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS53**
Lab Sample Id: 635710-017

Matrix: Soil
Date Collected: 08.30.19 10.35

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	08.31.19 06.24	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	08.31.19 06.24	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	08.31.19 06.24	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	08.31.19 06.24	U	1
o-Xylene	95-47-6	0.00102	0.00100	mg/kg	08.31.19 06.24		1
Total Xylenes	1330-20-7	0.00102	0.00100	mg/kg	08.31.19 06.24		1
Total BTEX		0.00102	0.00100	mg/kg	08.31.19 06.24		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118	%	70-130	08.31.19 06.24		
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.31.19 06.24		



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS54** Matrix: Soil Date Received: 08.30.19 16.10
 Lab Sample Id: 635710-018 Date Collected: 08.30.19 10.40 Sample Depth: 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.30.19 17.08 Basis: Wet Weight
 Seq Number: 3100259

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	362	19.8	mg/kg	08.30.19 22.04		2

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB % Moisture:
 Analyst: DTH Date Prep: 08.30.19 17.30 Basis: Wet Weight
 Seq Number: 3100431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.04.19 00.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.04.19 00.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.04.19 00.37	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.04.19 00.37	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	09.04.19 00.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	137	%	70-135	09.04.19 00.37	**
o-Terphenyl	84-15-1	115	%	70-135	09.04.19 00.37	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS54**
Lab Sample Id: 635710-018

Matrix: Soil
Date Collected: 08.30.19 10.40

Date Received: 08.30.19 16.10
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.03.19 09.00

Basis: Wet Weight

Seq Number: 3100475

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.03.19 15.41	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.03.19 15.41	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.03.19 15.41	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.03.19 15.41	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.03.19 15.41	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.03.19 15.41	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.03.19 15.41	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	09.03.19 15.41		
1,4-Difluorobenzene	540-36-3	108	%	70-130	09.03.19 15.41		



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: FS55 Matrix: Soil Date Received: 08.30.19 16.10
 Lab Sample Id: 635710-019 Date Collected: 08.30.19 10.45 Sample Depth: 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.30.19 17.08 Basis: Wet Weight
 Seq Number: 3100259

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1450	99.8	mg/kg	08.30.19 22.10		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB % Moisture:
 Analyst: DTH Date Prep: 08.30.19 17.30 Basis: Wet Weight
 Seq Number: 3100431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	99.2	24.9	mg/kg	09.04.19 00.57		1
Diesel Range Organics (DRO)	C10C28DRO	763	24.9	mg/kg	09.04.19 00.57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.04.19 00.57	U	1
Total TPH	PHC635	862	24.9	mg/kg	09.04.19 00.57		1
Total GRO-DRO	PHC628	862	24.9	mg/kg	09.04.19 00.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	132	%	70-135	09.04.19 00.57	
o-Terphenyl	84-15-1	113	%	70-135	09.04.19 00.57	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: FS55
Lab Sample Id: 635710-019

Matrix: Soil
Date Collected: 08.30.19 10.45

Date Received: 08.30.19 16.10
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.100	0.100	mg/kg	08.31.19 07.04	U	100
Toluene	108-88-3	<0.100	0.100	mg/kg	08.31.19 07.04	U	100
Ethylbenzene	100-41-4	0.103	0.100	mg/kg	08.31.19 07.04		100
m,p-Xylenes	179601-23-1	0.903	0.201	mg/kg	08.31.19 07.04		100
o-Xylene	95-47-6	0.228	0.100	mg/kg	08.31.19 07.04		100
Total Xylenes	1330-20-7	1.13	0.100	mg/kg	08.31.19 07.04		100
Total BTEX		1.23	0.100	mg/kg	08.31.19 07.04		100
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	116		%	70-130	08.31.19 07.04	
1,4-Difluorobenzene	540-36-3	100		%	70-130	08.31.19 07.04	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS56** Matrix: Soil Date Received: 08.30.19 16.10
 Lab Sample Id: 635710-020 Date Collected: 08.30.19 11.45 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.30.19 17.08 Basis: Wet Weight
 Seq Number: 3100259

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	536	49.9	mg/kg	08.30.19 22.17		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB % Moisture:
 Analyst: DTH Date Prep: 08.30.19 17.30 Basis: Wet Weight
 Seq Number: 3100431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	137	24.9	mg/kg	09.04.19 01.17		1
Diesel Range Organics (DRO)	C10C28DRO	800	24.9	mg/kg	09.04.19 01.17		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.04.19 01.17	U	1
Total TPH	PHC635	937	24.9	mg/kg	09.04.19 01.17		1
Total GRO-DRO	PHC628	937	24.9	mg/kg	09.04.19 01.17		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	138	%	70-135	09.04.19 01.17	**
o-Terphenyl	84-15-1	129	%	70-135	09.04.19 01.17	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS56**
Lab Sample Id: 635710-020

Matrix: Soil
Date Collected: 08.30.19 11.45

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.101	0.101	mg/kg	08.31.19 07.23	U	100
Toluene	108-88-3	0.121	0.101	mg/kg	08.31.19 07.23		100
Ethylbenzene	100-41-4	0.295	0.101	mg/kg	08.31.19 07.23		100
m,p-Xylenes	179601-23-1	1.79	0.202	mg/kg	08.31.19 07.23		100
o-Xylene	95-47-6	1.21	0.101	mg/kg	08.31.19 07.23		100
Total Xylenes	1330-20-7	3.00	0.101	mg/kg	08.31.19 07.23		100
Total BTEX		3.42	0.101	mg/kg	08.31.19 07.23		100
% Recovery							
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		113	%	70-130	08.31.19 07.23	
4-Bromofluorobenzene	460-00-4		122	%	70-130	08.31.19 07.23	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: FS57
Lab Sample Id: 635710-021

Matrix: Soil
Date Collected: 08.30.19 11.50

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100361

Date Prep: 09.03.19 08.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	792	49.5	mg/kg	09.03.19 10.22		5

Analytical Method: TPH by SW8015 Mod

Tech: MAB

Analyst: DTH

Seq Number: 3100431

Date Prep: 08.30.19 17.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	779	25.1	mg/kg	09.04.19 01.38		1
Diesel Range Organics (DRO)	C10C28DRO	2650	25.1	mg/kg	09.04.19 01.38		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.04.19 01.38	U	1
Total TPH	PHC635	3430	25.1	mg/kg	09.04.19 01.38		1
Total GRO-DRO	PHC628	3430	25.1	mg/kg	09.04.19 01.38		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	155	%	70-135	09.04.19 01.38	**
o-Terphenyl	84-15-1	169	%	70-135	09.04.19 01.38	**



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: FS57
Lab Sample Id: 635710-021

Matrix: Soil
Date Collected: 08.30.19 11.50

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0998	0.0998	mg/kg	08.31.19 07.43	U	100
Toluene	108-88-3	0.519	0.0998	mg/kg	08.31.19 07.43		100
Ethylbenzene	100-41-4	1.06	0.0998	mg/kg	08.31.19 07.43		100
m,p-Xylenes	179601-23-1	7.58	0.200	mg/kg	08.31.19 07.43		100
o-Xylene	95-47-6	2.59	0.0998	mg/kg	08.31.19 07.43		100
Total Xylenes	1330-20-7	10.2	0.0998	mg/kg	08.31.19 07.43		100
Total BTEX		11.7	0.0998	mg/kg	08.31.19 07.43		100
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	117	%	70-130	08.31.19 07.43		
4-Bromofluorobenzene	460-00-4	128	%	70-130	08.31.19 07.43		



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS58**
Lab Sample Id: 635710-022

Matrix: Soil
Date Collected: 08.30.19 11.55

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100361

Date Prep: 09.03.19 08.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	529	19.9	mg/kg	09.03.19 10.40		2

Analytical Method: TPH by SW8015 Mod

Tech: MAB

Analyst: DTH

Seq Number: 3100431

Date Prep: 08.30.19 17.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.04.19 01.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.04.19 01.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.04.19 01.57	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.04.19 01.57	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	09.04.19 01.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	09.04.19 01.57	
o-Terphenyl	84-15-1	103	%	70-135	09.04.19 01.57	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS58**
Lab Sample Id: 635710-022

Matrix: Soil
Date Collected: 08.30.19 11.55

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DTH

Analyst: DTH

Seq Number: 3100263

Date Prep: 08.30.19 17.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	08.31.19 08.22	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	08.31.19 08.22	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	08.31.19 08.22	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	08.31.19 08.22	U	1
o-Xylene	95-47-6	0.00160	0.00101	mg/kg	08.31.19 08.22		1
Total Xylenes	1330-20-7	0.00160	0.00101	mg/kg	08.31.19 08.22		1
Total BTEX		0.00160	0.00101	mg/kg	08.31.19 08.22		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	121		%	70-130	08.31.19 08.22	
1,4-Difluorobenzene	540-36-3	106		%	70-130	08.31.19 08.22	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS59** Matrix: Soil Date Received: 08.30.19 16.10
 Lab Sample Id: 635710-023 Date Collected: 08.30.19 12.00 Sample Depth: 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.03.19 08.09 Basis: Wet Weight
 Seq Number: 3100361

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	501	19.6	mg/kg	09.03.19 10.45		2

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB % Moisture:
 Analyst: DTH Date Prep: 08.30.19 17.30 Basis: Wet Weight
 Seq Number: 3100431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.04.19 02.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.04.19 02.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.04.19 02.18	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.04.19 02.18	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.04.19 02.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	09.04.19 02.18	
o-Terphenyl	84-15-1	106	%	70-135	09.04.19 02.18	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS59**
Lab Sample Id: 635710-023

Matrix: Soil
Date Collected: 08.30.19 12.00

Date Received: 08.30.19 16.10
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DTH

Analyst: DTH

Seq Number: 3100263

Date Prep: 08.30.19 17.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	08.31.19 08.42	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	08.31.19 08.42	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	08.31.19 08.42	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	08.31.19 08.42	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	08.31.19 08.42	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	08.31.19 08.42	U	1
Total BTEX		<0.00101	0.00101	mg/kg	08.31.19 08.42	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		87	%	70-130	08.31.19 08.42	
4-Bromofluorobenzene	460-00-4		129	%	70-130	08.31.19 08.42	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS60** Matrix: Soil Date Received: 08.30.19 16.10
 Lab Sample Id: 635710-024 Date Collected: 08.30.19 12.05 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.03.19 08.09 Basis: Wet Weight
 Seq Number: 3100361

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	574	50.1	mg/kg	09.03.19 10.51		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB % Moisture:
 Analyst: DTH Date Prep: 08.30.19 17.30 Basis: Wet Weight
 Seq Number: 3100431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.04.19 02.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.04.19 02.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.04.19 02.38	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.04.19 02.38	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	09.04.19 02.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	131	%	70-135	09.04.19 02.38	
o-Terphenyl	84-15-1	113	%	70-135	09.04.19 02.38	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS60**
Lab Sample Id: 635710-024

Matrix: Soil
Date Collected: 08.30.19 12.05

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.30.19 17.30

Basis: Wet Weight

Seq Number: 3100263

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	08.31.19 09.02	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	08.31.19 09.02	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	08.31.19 09.02	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	08.31.19 09.02	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	08.31.19 09.02	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	08.31.19 09.02	U	1
Total BTEX		<0.000996	0.000996	mg/kg	08.31.19 09.02	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		104	%	70-130	08.31.19 09.02	
4-Bromofluorobenzene	460-00-4		120	%	70-130	08.31.19 09.02	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS61** Matrix: Soil Date Received: 08.30.19 16.10
 Lab Sample Id: 635710-025 Date Collected: 08.30.19 12.10 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.03.19 08.09 Basis: Wet Weight
 Seq Number: 3100361

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	825	49.5	mg/kg	09.03.19 10.57		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.03.19 09.00 Basis: Wet Weight
 Seq Number: 3100461

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.03.19 14.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	270	25.1	mg/kg	09.03.19 14.56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.03.19 14.56	U	1
Total GRO-DRO	PHC628	270	25.1	mg/kg	09.03.19 14.56		1
Total TPH	PHC635	270	25.1	mg/kg	09.03.19 14.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	135	%	70-135	09.03.19 14.56	
o-Terphenyl	84-15-1	121	%	70-135	09.03.19 14.56	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS61**
Lab Sample Id: 635710-025

Matrix: Soil
Date Collected: 08.30.19 12.10

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.03.19 09.00

Basis: Wet Weight

Seq Number: 3100475

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.03.19 16.01	U	1
Toluene	108-88-3	0.00107	0.00100	mg/kg	09.03.19 16.01		1
Ethylbenzene	100-41-4	0.00816	0.00100	mg/kg	09.03.19 16.01		1
m,p-Xylenes	179601-23-1	0.0440	0.00200	mg/kg	09.03.19 16.01		1
o-Xylene	95-47-6	0.0388	0.00100	mg/kg	09.03.19 16.01		1
Total Xylenes	1330-20-7	0.0828	0.00100	mg/kg	09.03.19 16.01		1
Total BTEX		0.0920	0.00100	mg/kg	09.03.19 16.01		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	120		%	70-130	09.03.19 16.01	
1,4-Difluorobenzene	540-36-3	118		%	70-130	09.03.19 16.01	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS62**
Lab Sample Id: 635710-026

Matrix: Soil
Date Collected: 08.30.19 12.50

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100361

Date Prep: 09.03.19 08.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	218	19.6	mg/kg	09.03.19 11.14		2

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100461

Date Prep: 09.03.19 09.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	127	25.1	mg/kg	09.03.19 15.56		1
Diesel Range Organics (DRO)	C10C28DRO	1100	25.1	mg/kg	09.03.19 15.56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.03.19 15.56	U	1
Total GRO-DRO	PHC628	1230	25.1	mg/kg	09.03.19 15.56		1
Total TPH	PHC635	1230	25.1	mg/kg	09.03.19 15.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	129	%	70-135	09.03.19 15.56	
o-Terphenyl	84-15-1	128	%	70-135	09.03.19 15.56	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS62**
Lab Sample Id: 635710-026

Matrix: Soil
Date Collected: 08.30.19 12.50

Date Received: 08.30.19 16.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.03.19 09.00

Basis: Wet Weight

Seq Number: 3100475

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0996	0.0996	mg/kg	09.03.19 17.21	U	100
Toluene	108-88-3	0.544	0.0996	mg/kg	09.03.19 17.21		100
Ethylbenzene	100-41-4	1.07	0.0996	mg/kg	09.03.19 17.21		100
m,p-Xylenes	179601-23-1	5.59	0.199	mg/kg	09.03.19 17.21		100
o-Xylene	95-47-6	2.91	0.0996	mg/kg	09.03.19 17.21		100
Total Xylenes	1330-20-7	8.50	0.0996	mg/kg	09.03.19 17.21		100
Total BTEX		10.1	0.0996	mg/kg	09.03.19 17.21		100
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	116		%	70-130	09.03.19 17.21	
4-Bromofluorobenzene	460-00-4	125		%	70-130	09.03.19 17.21	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS63**
Lab Sample Id: 635710-027

Matrix: Soil
Date Collected: 08.30.19 12.55

Date Received: 08.30.19 16.10
Sample Depth: 4.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100361

Date Prep: 09.03.19 08.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	322	20.0	mg/kg	09.03.19 11.20		2

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100461

Date Prep: 09.03.19 09.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.03.19 16.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.03.19 16.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.03.19 16.16	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	09.03.19 16.16	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.03.19 16.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	09.03.19 16.16	
o-Terphenyl	84-15-1	94	%	70-135	09.03.19 16.16	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS63**
Lab Sample Id: 635710-027

Matrix: Soil
Date Collected: 08.30.19 12.55

Date Received: 08.30.19 16.10
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.03.19 09.00

Basis: Wet Weight

Seq Number: 3100475

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	09.03.19 16.21	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	09.03.19 16.21	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	09.03.19 16.21	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	09.03.19 16.21	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	09.03.19 16.21	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	09.03.19 16.21	U	1
Total BTEX		<0.000994	0.000994	mg/kg	09.03.19 16.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	116	%	70-130	09.03.19 16.21		
4-Bromofluorobenzene	460-00-4	128	%	70-130	09.03.19 16.21		



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS64** Matrix: Soil Date Received: 08.30.19 16.10
 Lab Sample Id: 635710-028 Date Collected: 08.30.19 13.00 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.03.19 08.09 Basis: Wet Weight
 Seq Number: 3100361

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1140	99.0	mg/kg	09.03.19 12.29	D	10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.03.19 09.00 Basis: Wet Weight
 Seq Number: 3100461

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.03.19 16.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.03.19 16.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.03.19 16.36	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.03.19 16.36	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.03.19 16.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	09.03.19 16.36	
o-Terphenyl	84-15-1	96	%	70-135	09.03.19 16.36	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS64**
Lab Sample Id: 635710-028

Matrix: Soil
Date Collected: 08.30.19 13.00

Date Received: 08.30.19 16.10
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.03.19 09.00

Basis: Wet Weight

Seq Number: 3100475

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.03.19 16.41	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.03.19 16.41	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.03.19 16.41	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.03.19 16.41	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.03.19 16.41	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.03.19 16.41	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.03.19 16.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	09.03.19 16.41		
4-Bromofluorobenzene	460-00-4	116	%	70-130	09.03.19 16.41		



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS65** Matrix: Soil Date Received: 08.30.19 16.10
 Lab Sample Id: 635710-029 Date Collected: 08.30.19 13.05 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.03.19 08.09 Basis: Wet Weight
 Seq Number: 3100361

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3200	197	mg/kg	09.03.19 12.35	D	20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.03.19 09.00 Basis: Wet Weight
 Seq Number: 3100461

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	157	25.1	mg/kg	09.03.19 16.56		1
Diesel Range Organics (DRO)	C10C28DRO	1070	25.1	mg/kg	09.03.19 16.56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.03.19 16.56	U	1
Total GRO-DRO	PHC628	1230	25.1	mg/kg	09.03.19 16.56		1
Total TPH	PHC635	1230	25.1	mg/kg	09.03.19 16.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	09.03.19 16.56	
o-Terphenyl	84-15-1	126	%	70-135	09.03.19 16.56	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS65**
Lab Sample Id: 635710-029

Matrix: Soil
Date Collected: 08.30.19 13.05

Date Received: 08.30.19 16.10
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.03.19 09.00

Basis: Wet Weight

Seq Number: 3100475

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.100	0.100	mg/kg	09.03.19 17.41	U	100
Toluene	108-88-3	3.95	0.100	mg/kg	09.03.19 17.41		100
Ethylbenzene	100-41-4	3.14	0.100	mg/kg	09.03.19 17.41		100
m,p-Xylenes	179601-23-1	22.3	0.200	mg/kg	09.03.19 17.41		100
o-Xylene	95-47-6	6.54	0.100	mg/kg	09.03.19 17.41		100
Total Xylenes	1330-20-7	28.8	0.100	mg/kg	09.03.19 17.41		100
Total BTEX		35.9	0.100	mg/kg	09.03.19 17.41		100
% Recovery							
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		116	%	70-130	09.03.19 17.41	
4-Bromofluorobenzene	460-00-4		128	%	70-130	09.03.19 17.41	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS66** Matrix: Soil Date Received: 08.30.19 16.10
 Lab Sample Id: 635710-030 Date Collected: 08.30.19 13.10 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.03.19 08.09 Basis: Wet Weight
 Seq Number: 3100361

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	514	19.8	mg/kg	09.03.19 11.37		2

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.03.19 09.00 Basis: Wet Weight
 Seq Number: 3100461

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	141	25.1	mg/kg	09.03.19 17.16		1
Diesel Range Organics (DRO)	C10C28DRO	1150	25.1	mg/kg	09.03.19 17.16		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.03.19 17.16	U	1
Total GRO-DRO	PHC628	1290	25.1	mg/kg	09.03.19 17.16		1
Total TPH	PHC635	1290	25.1	mg/kg	09.03.19 17.16		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	129	%	70-135	09.03.19 17.16	
o-Terphenyl	84-15-1	130	%	70-135	09.03.19 17.16	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS66**
Lab Sample Id: 635710-030

Matrix: Soil
Date Collected: 08.30.19 13.10

Date Received: 08.30.19 16.10
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DTH

Analyst: DTH

Seq Number: 3100475

Date Prep: 09.03.19 09.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.100	0.100	mg/kg	09.03.19 18.01	U	100
Toluene	108-88-3	0.974	0.100	mg/kg	09.03.19 18.01		100
Ethylbenzene	100-41-4	1.25	0.100	mg/kg	09.03.19 18.01		100
m,p-Xylenes	179601-23-1	7.15	0.200	mg/kg	09.03.19 18.01		100
o-Xylene	95-47-6	3.90	0.100	mg/kg	09.03.19 18.01		100
Total Xylenes	1330-20-7	11.1	0.100	mg/kg	09.03.19 18.01		100
Total BTEX		13.3	0.100	mg/kg	09.03.19 18.01		100
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	124		%	70-130	09.03.19 18.01	
1,4-Difluorobenzene	540-36-3	119		%	70-130	09.03.19 18.01	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS67** Matrix: Soil Date Received: 08.30.19 16.10
 Lab Sample Id: 635710-031 Date Collected: 08.30.19 13.15 Sample Depth: 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.03.19 08.09 Basis: Wet Weight
 Seq Number: 3100361

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	337	19.8	mg/kg	09.03.19 11.43		2

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.03.19 09.00 Basis: Wet Weight
 Seq Number: 3100461

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.03.19 17.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.03.19 17.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.03.19 17.36	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	09.03.19 17.36	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.03.19 17.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	09.03.19 17.36	
o-Terphenyl	84-15-1	99	%	70-135	09.03.19 17.36	



Certificate of Analytical Results 635710

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS67**
Lab Sample Id: 635710-031

Matrix: Soil
Date Collected: 08.30.19 13.15

Date Received: 08.30.19 16.10
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.03.19 09.00

Basis: Wet Weight

Seq Number: 3100475

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.03.19 17.01	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.03.19 17.01	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.03.19 17.01	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.03.19 17.01	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.03.19 17.01	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.03.19 17.01	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.03.19 17.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	09.03.19 17.01		
4-Bromofluorobenzene	460-00-4	126	%	70-130	09.03.19 17.01		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 Obs Well #1

Analytical Method: Chloride by EPA 300

Seq Number: 3100259

MB Sample Id: 7685415-1-BLK

Matrix: Solid

LCS Sample Id: 7685415-1-BKS

Prep Method: E300P

Date Prep: 08.30.19

LCSD Sample Id: 7685415-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	260	104	256	102	80-120	2	20	mg/kg	08.30.19 19:14	

Analytical Method: Chloride by EPA 300

Seq Number: 3100361

MB Sample Id: 7685432-1-BLK

Matrix: Solid

LCS Sample Id: 7685432-1-BKS

Prep Method: E300P

Date Prep: 09.03.19

LCSD Sample Id: 7685432-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	232	93	234	94	80-120	1	20	mg/kg	09.03.19 10:11	

Analytical Method: Chloride by EPA 300

Seq Number: 3100259

Parent Sample Id: 635710-001

Matrix: Soil

MS Sample Id: 635710-001 S

Prep Method: E300P

Date Prep: 08.30.19

MSD Sample Id: 635710-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.31	198	215	105	214	105	80-120	0	20	mg/kg	08.30.19 19:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3100259

Parent Sample Id: 635710-011

Matrix: Solid

MS Sample Id: 635710-011 S

Prep Method: E300P

Date Prep: 08.30.19

MSD Sample Id: 635710-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	17.6	200	231	107	231	107	80-120	0	20	mg/kg	08.30.19 21:01	

Analytical Method: Chloride by EPA 300

Seq Number: 3100361

Parent Sample Id: 635710-021

Matrix: Soil

MS Sample Id: 635710-021 S

Prep Method: E300P

Date Prep: 09.03.19

MSD Sample Id: 635710-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	792	998	1900	111	1920	113	80-120	1	20	mg/kg	09.03.19 10:28	

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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.

Remuda 25 Obs Well #1

Analytical Method: Chloride by EPA 300

Seq Number: 3100361

Parent Sample Id: 635710-031

Matrix: Solid

MS Sample Id: 635710-031 S

Prep Method: E300P

Date Prep: 09.03.19

MSD Sample Id: 635710-031 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	337	398	789	114	796	115	80-120	1	20	mg/kg	09.03.19 11:49	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100262

MB Sample Id: 7685426-1-BLK

Matrix: Solid

LCS Sample Id: 7685426-1-BKS

Prep Method: SW8015P

Date Prep: 08.30.19

LCSD Sample Id: 7685426-1-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)	<9.88	1000	1020	102	1010	101	70-135	1	35	mg/kg	08.30.19 11:06	
Diesel Range Organics (DRO)	<9.88	1000	1010	101	1010	101	70-135	0	35	mg/kg	08.30.19 11:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		117		118		70-135	%	08.30.19 11:06
o-Terphenyl	96		109		110		70-135	%	08.30.19 11:06

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100431

MB Sample Id: 7685491-1-BLK

Matrix: Solid

LCS Sample Id: 7685491-1-BKS

Prep Method: SW8015P

Date Prep: 08.30.19

LCSD Sample Id: 7685491-1-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)	<9.88	1000	1090	109	1080	108	70-135	1	35	mg/kg	09.03.19 18:36	
Diesel Range Organics (DRO)	<25.0	1000	1090	109	1070	107	70-135	2	35	mg/kg	09.03.19 18:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		130		129		70-135	%	09.03.19 18:36
o-Terphenyl	99		116		113		70-135	%	09.03.19 18:36

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100461

MB Sample Id: 7685544-1-BLK

Matrix: Solid

LCS Sample Id: 7685544-1-BKS

Prep Method: SW8015P

Date Prep: 09.03.19

LCSD Sample Id: 7685544-1-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)	<9.88	1000	1010	101	999	100	70-135	1	35	mg/kg	09.03.19 14:17	
Diesel Range Organics (DRO)	<9.88	1000	1010	101	993	99	70-135	2	35	mg/kg	09.03.19 14:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		121		120		70-135	%	09.03.19 14:17
o-Terphenyl	105		110		108		70-135	%	09.03.19 14:17

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.

Remuda 25 Obs Well #1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100262

Parent Sample Id: 635671-001

Matrix: Soil

MS Sample Id: 635671-001 S

Prep Method: SW8015P

Date Prep: 08.30.19

MSD Sample Id: 635671-001 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)	<9.84	996	1130	113	1100	110	70-135	3	35	mg/kg	08.30.19 14:42	
Diesel Range Organics (DRO)	<9.84	996	1150	115	1120	112	70-135	3	35	mg/kg	08.30.19 14:42	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		128		70-135	%	08.30.19 14:42
o-Terphenyl	118		125		70-135	%	08.30.19 14:42

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100431

Parent Sample Id: 635710-005

Matrix: Soil

MS Sample Id: 635710-005 S

Prep Method: SW8015P

Date Prep: 08.30.19

MSD Sample Id: 635710-005 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)	<9.92	1000	1100	110	1110	110	70-135	1	35	mg/kg	09.03.19 19:36	
Diesel Range Organics (DRO)	17.4	1000	1310	129	1090	106	70-135	18	35	mg/kg	09.03.19 19:36	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	130		135		70-135	%	09.03.19 19:36
o-Terphenyl	128		124		70-135	%	09.03.19 19:36

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100461

Parent Sample Id: 635710-025

Matrix: Soil

MS Sample Id: 635710-025 S

Prep Method: SW8015P

Date Prep: 09.03.19

MSD Sample Id: 635710-025 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)	<9.88	1000	1010	101	1060	105	70-135	5	35	mg/kg	09.03.19 15:16	
Diesel Range Organics (DRO)	270	1000	1170	90	1290	101	70-135	10	35	mg/kg	09.03.19 15:16	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		136	**	70-135	%	09.03.19 15:16
o-Terphenyl	120		127		70-135	%	09.03.19 15:16

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

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

Remuda 25 Obs Well #1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100260

MB Sample Id: 7685424-1-BLK

Matrix: Solid

LCS Sample Id: 7685424-1-BKS

Prep Method: SW5030B

Date Prep: 08.30.19

LCSD Sample Id: 7685424-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0880	88	0.0929	93	70-130	5	35	mg/kg	08.30.19 11:31	
Toluene	<0.00100	0.100	0.0970	97	0.101	101	70-130	4	35	mg/kg	08.30.19 11:31	
Ethylbenzene	<0.00100	0.100	0.108	108	0.116	116	71-129	7	35	mg/kg	08.30.19 11:31	
m,p-Xylenes	<0.00100	0.200	0.224	112	0.239	120	70-135	6	35	mg/kg	08.30.19 11:31	
o-Xylene	<0.000500	0.100	0.110	110	0.118	118	71-133	7	35	mg/kg	08.30.19 11:31	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		109		104		70-130	%	08.30.19 11:31
4-Bromofluorobenzene	118		126		121		70-130	%	08.30.19 11:31

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100263

MB Sample Id: 7685425-1-BLK

Matrix: Solid

LCS Sample Id: 7685425-1-BKS

Prep Method: SW5030B

Date Prep: 08.30.19

LCSD Sample Id: 7685425-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0891	89	0.0885	89	70-130	1	35	mg/kg	08.30.19 23:30	
Toluene	<0.00100	0.100	0.0917	92	0.0906	91	70-130	1	35	mg/kg	08.30.19 23:30	
Ethylbenzene	<0.00100	0.100	0.106	106	0.101	101	71-129	5	35	mg/kg	08.30.19 23:30	
m,p-Xylenes	<0.00100	0.200	0.216	108	0.210	105	70-135	3	35	mg/kg	08.30.19 23:30	
o-Xylene	<0.000500	0.100	0.107	107	0.104	104	71-133	3	35	mg/kg	08.30.19 23:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		97		98		70-130	%	08.30.19 23:30
4-Bromofluorobenzene	110		109		107		70-130	%	08.30.19 23:30

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100475

MB Sample Id: 7685551-1-BLK

Matrix: Solid

LCS Sample Id: 7685551-1-BKS

Prep Method: SW5030B

Date Prep: 09.03.19

LCSD Sample Id: 7685551-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0851	85	0.0916	92	70-130	7	35	mg/kg	09.03.19 13:43	
Toluene	<0.000500	0.100	0.0911	91	0.0975	98	70-130	7	35	mg/kg	09.03.19 13:43	
Ethylbenzene	<0.000500	0.100	0.103	103	0.112	112	71-129	8	35	mg/kg	09.03.19 13:43	
m,p-Xylenes	<0.00100	0.200	0.214	107	0.232	116	70-135	8	35	mg/kg	09.03.19 13:43	
o-Xylene	<0.00100	0.100	0.105	105	0.115	115	71-133	9	35	mg/kg	09.03.19 13:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		106		112		70-130	%	09.03.19 13:43
4-Bromofluorobenzene	112		120		120		70-130	%	09.03.19 13:43

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

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

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

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



LT Environmental, Inc.

Remuda 25 Obs Well #1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100260

Parent Sample Id: 635671-001

Matrix: Soil

MS Sample Id: 635671-001 S

Prep Method: SW5030B

Date Prep: 08.30.19

MSD Sample Id: 635671-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00101	0.101	0.0930	92	0.0879	88	70-130	6	35	mg/kg	08.30.19 14:52	
Toluene	<0.000505	0.101	0.0968	96	0.0914	91	70-130	6	35	mg/kg	08.30.19 14:52	
Ethylbenzene	<0.000505	0.101	0.108	107	0.101	101	71-129	7	35	mg/kg	08.30.19 14:52	
m,p-Xylenes	<0.00101	0.202	0.227	112	0.210	105	70-135	8	35	mg/kg	08.30.19 14:52	
o-Xylene	<0.000505	0.101	0.115	114	0.105	105	71-133	9	35	mg/kg	08.30.19 14:52	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		112		70-130	%	08.30.19 14:52
4-Bromofluorobenzene	120		125		70-130	%	08.30.19 14:52

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100263

Parent Sample Id: 635710-005

Matrix: Soil

MS Sample Id: 635710-005 S

Prep Method: SW5030B

Date Prep: 08.30.19

MSD Sample Id: 635710-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0894	89	0.0908	90	70-130	2	35	mg/kg	08.31.19 00:10	
Toluene	<0.00100	0.100	0.0915	92	0.0926	92	70-130	1	35	mg/kg	08.31.19 00:10	
Ethylbenzene	<0.000502	0.100	0.101	101	0.102	101	71-129	1	35	mg/kg	08.31.19 00:10	
m,p-Xylenes	<0.00100	0.201	0.207	103	0.206	102	70-135	0	35	mg/kg	08.31.19 00:10	
o-Xylene	0.000645	0.100	0.103	102	0.104	102	71-133	1	35	mg/kg	08.31.19 00:10	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		100		70-130	%	08.31.19 00:10
4-Bromofluorobenzene	117		116		70-130	%	08.31.19 00:10

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100475

Parent Sample Id: 635710-001

Matrix: Soil

MS Sample Id: 635710-001 S

Prep Method: SW5030B

Date Prep: 09.03.19

MSD Sample Id: 635710-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0874	87	0.0865	87	70-130	1	35	mg/kg	09.03.19 14:23	
Toluene	<0.000502	0.100	0.0917	92	0.0852	85	70-130	7	35	mg/kg	09.03.19 14:23	
Ethylbenzene	<0.000502	0.100	0.100	100	0.0884	88	71-129	12	35	mg/kg	09.03.19 14:23	
m,p-Xylenes	<0.00100	0.201	0.210	104	0.179	90	70-135	16	35	mg/kg	09.03.19 14:23	
o-Xylene	<0.00100	0.100	0.105	105	0.0916	92	71-133	14	35	mg/kg	09.03.19 14:23	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		103		70-130	%	09.03.19 14:23
4-Bromofluorobenzene	119		119		70-130	%	09.03.19 14:23

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

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

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

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



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432-704-5440) El Paso, TX (915) 243-3443 Lubbock, TX (806) 784-1296
 Hobbs, NM (575-392-7330) Phoenix, AZ (480) 355-0800 Atlanta, GA (770-449-8800) Tampa, FL (813) 820-2000

Work Order No: 635770

www.xenco.com Page 1 of 4

Chain of Custody

Project Manager:	Dan McIr	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:	dmc@ltenv.com imc@xtoenv.com

Project Name:	Permian 25 OK Well #1	Turn Around	
Project Number:	2RP-5304	Routine ☐	
P.O. Number:		Rush: 3day	
Sampler's Name:	Robert McAfee	Due Date:	

2:04 PM

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Num	TPH (EPA 8015)	BTEX (EPA 9-0021)	Chloride (EPA 300.0)	Composite									
FS37	S	08/29/19	1030	4'	1	X	X	X										
FS38			1035	4'		X	X	X										
FS39			1040	4'		X	X	X										
FS40			1050	4'		X	X	X										
FS41			1055	4'		X	X	X										
FS42			1315	4.5'		X	X	X										
FS43			1320	4'		X	X	X										
FS44			1330	4'		X	X	X										
FS45			1335	4'		X	X	X										
FS46			1310	4'		X	X	X										

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2:04 PM

2

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

Circle Method(s) and Metal(s) to be analyzed

Relinquished by: (Signature) Received by: (Signature) Date/Time Relinquished by: (Signature) Received by: (Signature) Date/Time

Relinquished by: (Signature) Received by: (Signature) Date/Time Relinquished by: (Signature) Received by: (Signature) Date/Time



Chain of Custody

Work Order No:

035710

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 508-3334
 Midland, TX (432-704-5440) EL Paso, TX (915) 565-3443 Lubbock, TX (806) 794-1296

McKenzie, NM (575-382-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-448-0000) Tampa, FL (813-620-2000)

www.xenco.com

Page 2 of 4

Project Manager:	Dan McEl	Bill to (if different):	Kyle Littel
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:	dmccel@xenco.com kmlittel@xenco.com

Program: ☐ ST/PT ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐	
State of Project:	
Reporting Level II ☐ Level III ☐ ST/UST ☐ PRP ☐ Level IV ☐	
Deliverables: EDO ☐ ADAPT ☐ Other:	

Project Name:	Remuda 25 Obs Well #1	Turn Around	
Project Number:	2RP-5309	Routine ☐	
P.O. Number:		Rush: ☐ (date)	
Sampler's Name:	Robert McAlister	Due Date:	

SAMPLE IDENTIFICATION						ANALYSIS REQUEST										Work Order Notes				
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EP)	BTEX (E)	Chloride												Sample Comments
FS 47	S	08/21/11	1315	4'	1	X	X	X												Composite
FS 48			1320	4'		X	X	X												
FS 49			1325	5'		X	X	X												
FS 50			1330	5'		X	X	X												
FS 51			1335	4'		X	X	X												
FS 52			1340	4'		X	X	X												
FS 53		08/24/11	1035	4'		X	X	X												Composite
FS 54			1040	4.5'		X	X	X												
FS 55			1045	4.5'		X	X	X												
FS 56			1145	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

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>[Signature]</i>	<i>[Signature]</i>	8/30/11 14:10			



Chain of Custody

Work Order No:

435710

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) 515-3443 Lubbock, TX (806) 796-1295
 Hobbs, NM (575) 392-7350 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 520-2000

www.xenco.com

Page 3 of 4

Project Manager:	Den Moir	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:	dmair@xenco.com imcrae@xenco.com

ANALYSIS REQUEST

Work Order Notes

Program: USTPST	☐ PRP	☐ Brownfields	☐ RC	☐ Superfund
State of Project:				
Reporting Level II	☐ Level III	☐ ST/UST	☐ HRP	☐ Level IV
Deliverables: ETD	☐	ADAPT	☐	Other:

Project Name:	Remuda 25 Oil Well #1	Turn Around	
Project Number:	2 RP-5304	Routine	☐
P.O. Number:		Rush:	3 day
Sampler's Name:	Robert McAlfee	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes	No	Well loc:	Yes	No
Temperature (°C):				Identification ID	22191	
Received Initial:	Yes	No				
Cooler Custody Seal:	Yes	No			Correction Factor:	
Sample Custody Seal:	Yes	No			Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 8015)	Chloride (EPA 8015)	Sample Comments									
F537	S	8/30/19	11:50	4'	1	X	X	X	Composite									
F538			11:55	4'		X	X	X										
F539			12:00	4.5'		X	X	X										
F560			12:05	4'		X	X	X										
F561			12:10	4'		X	X	X										
F562			12:50	4'		X	X	X										
F563			12:55	4.5'		X	X	X										
F564			13:00	5'		X	X	X										
F565			13:05	5'		X	X	X										
F566			13:10	5'		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

Note: Signatures 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>[Signature]</i>	<i>[Signature]</i>	8/30/19 12:10			



Chain of Custody

Work Order No: 1635710

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) 794-1286
 Hobbs, NM (575-382-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-0000) Tampa, FL (813-500-2000)

www.xenco.com

Page 4 of 4

Project Manager:	Dan Mair	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:	dmair@xenco.com mcafee@xeno.com

Project Name:	Remuda 25 Ops Well #1	Turn Around	
Project Number:		Routine	☐
P.O. Number:	2RP-5309	Rush	3day
Sampler's Name:	Robert McAfee	Due Date:	

ANALYSIS REQUEST

Work Order Notes

Temperature (°C):		Temp Blank	Yes	No	Well Ice	Yes	No
Received In tact:	Yes	No	Thermometer ID: 28281				
Carrier Custody Seal:	Yes	No	Correction Factor:				
Sample Custody Seal:	Yes	No	Total Containers:				

Sample Identification		Matrix	Date Sampled	Time Sampled	Depth	Number of Containers													
F567	S	08/01/19	1315	4.5'	1	TPH (EPA 8015)	X	BTEX (EPA 8-8021)	X	Chloride (EPA 300.0)	X								

TAT starts the day received by the lab, if received by 4:30pm	
Sample Comments:	Composite

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

Note: 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. 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>[Signature]</i>	<i>[Signature]</i>	8/30/19 16:10			



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 08/30/2019 04:10:00 PM

Work Order #: 635710

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	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)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 08/30/2019

Checklist reviewed by:

Jessica Kramer

Date: 08/30/2019

Analytical Report 636274

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda 25 Obs Well #1

10-SEP-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

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

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



10-SEP-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **636274**

Remuda 25 Obs Well #1

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 636274. 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. 636274 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

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 636274****LT Environmental, Inc., Arvada, CO**

Remuda 25 Obs Well #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS68	S	09-04-19 10:15	4.5 ft	636274-001
FS69	S	09-04-19 10:20	4.5 ft	636274-002
FS70	S	09-04-19 10:25	5 ft	636274-003
FS71	S	09-04-19 10:45	5 ft	636274-004
FS72	S	09-04-19 10:50	5.5 ft	636274-005
FS73	S	09-04-19 10:55	5.5 ft	636274-006
FS74	S	09-04-19 11:00	55 ft	636274-007
FS75	S	09-04-19 11:20	4.5 ft	636274-008
FS76	S	09-04-19 11:25	5.5 ft	636274-009



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 25 Obs Well #1

Project ID:
Work Order Number(s): 636274

Report Date: 10-SEP-19
Date Received: 09/06/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3100944 BTEX by EPA 8021B

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

Batch: LBA-3100946 TPH by SW8015 Mod

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

Samples affected are: 636274-001 S,636274-001 SD,636274-005.

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

Samples affected are: 636274-005.



Certificate of Analysis Summary 636274

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Sep-06-19 04:10 pm

Report Date: 10-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636274-001	636274-002	636274-003	636274-004	636274-005	636274-006
	<i>Field Id:</i>	FS68	FS69	FS70	FS71	FS72	FS73
	<i>Depth:</i>	4.5- ft	4.5- ft	5- ft	5- ft	5.5- ft	5.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-04-19 10:15	Sep-04-19 10:20	Sep-04-19 10:25	Sep-04-19 10:45	Sep-04-19 10:50	Sep-04-19 10:55
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-09-19 11:00	Sep-09-19 11:00	Sep-09-19 11:00	Sep-09-19 11:00	Sep-09-19 11:00	Sep-09-19 11:00
	<i>Analyzed:</i>	Sep-09-19 12:49	Sep-09-19 17:06	Sep-09-19 14:08	Sep-09-19 16:46	Sep-09-19 15:47	Sep-09-19 15:27
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00101 0.00101	<0.101 0.101	<0.00101 0.00101	<0.00994 0.00994	<0.101 0.101	<0.00994 0.00994
Toluene		<0.00101 0.00101	0.121 0.101	<0.00101 0.00101	<0.00994 0.00994	0.741 0.101	<0.00994 0.00994
Ethylbenzene		<0.00101 0.00101	<0.101 0.101	<0.00101 0.00101	0.0111 0.00994	1.30 0.101	<0.00994 0.00994
m,p-Xylenes		<0.00202 0.00202	0.352 0.202	<0.00201 0.00201	0.0336 0.0199	6.12 0.201	<0.0199 0.0199
o-Xylene		<0.00101 0.00101	0.292 0.101	<0.00101 0.00101	0.0231 0.00994	4.29 0.101	<0.00994 0.00994
Total Xylenes		<0.00101 0.00101	0.644 0.101	<0.00101 0.00101	0.0567 0.00994	10.4 0.101	<0.00994 0.00994
Total BTEX		<0.00101 0.00101	0.765 0.101	<0.00101 0.00101	0.0678 0.00994	12.5 0.101	<0.00994 0.00994
Chloride by EPA 300	<i>Extracted:</i>	Sep-09-19 09:09	Sep-09-19 09:09	Sep-09-19 09:09	Sep-09-19 09:09	Sep-09-19 09:09	Sep-09-19 09:09
	<i>Analyzed:</i>	Sep-09-19 12:57	Sep-09-19 13:16	Sep-09-19 13:22	Sep-09-19 13:29	Sep-09-19 13:35	Sep-09-19 13:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		28.2 9.90	49.8 10.0	595 20.2	179 10.0	51.7 10.0	2770 99.8
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-09-19 10:45	Sep-09-19 10:45	Sep-09-19 10:45	Sep-09-19 10:45	Sep-09-19 10:45	Sep-09-19 10:45
	<i>Analyzed:</i>	Sep-09-19 11:35	Sep-09-19 13:39	Sep-09-19 13:59	Sep-09-19 14:20	Sep-09-19 14:40	Sep-09-19 15:01
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<25.1 25.1	<25.1 25.1	<25.1 25.1	<24.9 24.9	292 25.1	<25.1 25.1
Diesel Range Organics (DRO)		<25.1 25.1	286 25.1	<25.1 25.1	133 24.9	1070 25.1	<25.1 25.1
Motor Oil Range Hydrocarbons (MRO)		<25.1 25.1	<25.1 25.1	<25.1 25.1	<24.9 24.9	<25.1 25.1	<25.1 25.1
Total TPH		<25.1 25.1	286 25.1	<25.1 25.1	133 24.9	1360 25.1	<25.1 25.1

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

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 636274

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Sep-06-19 04:10 pm

Report Date: 10-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636274-007	636274-008	636274-009			
	<i>Field Id:</i>	FS74	FS75	FS76			
	<i>Depth:</i>	55- ft	4.5- ft	5.5- ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Sep-04-19 11:00	Sep-04-19 11:20	Sep-04-19 11:25			
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-09-19 11:00	Sep-09-19 11:00	Sep-09-19 11:00			
	<i>Analyzed:</i>	Sep-09-19 14:28	Sep-09-19 14:47	Sep-09-19 15:07			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00100 0.00100	<0.00101 0.00101	<0.000996 0.000996			
Toluene		<0.00100 0.00100	<0.00101 0.00101	<0.000996 0.000996			
Ethylbenzene		<0.00100 0.00100	<0.00101 0.00101	<0.000996 0.000996			
m,p-Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199			
o-Xylene		<0.00100 0.00100	<0.00101 0.00101	<0.000996 0.000996			
Total Xylenes		<0.00100 0.00100	<0.00101 0.00101	<0.000996 0.000996			
Total BTEX		<0.00100 0.00100	<0.00101 0.00101	<0.000996 0.000996			
Chloride by EPA 300	<i>Extracted:</i>	Sep-09-19 09:09	Sep-09-19 09:09	Sep-09-19 09:09			
	<i>Analyzed:</i>	Sep-09-19 14:01	Sep-09-19 14:07	Sep-09-19 14:14			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		316 9.90	1290 D 99.4	1860 99.8			
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-09-19 10:45	Sep-09-19 10:45	Sep-09-19 10:45			
	<i>Analyzed:</i>	Sep-09-19 15:22	Sep-09-19 16:03	Sep-09-19 16:24			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<25.0 25.0	<24.9 24.9	<25.1 25.1			
Diesel Range Organics (DRO)		<25.0 25.0	<24.9 24.9	<25.1 25.1			
Motor Oil Range Hydrocarbons (MRO)		<25.0 25.0	<24.9 24.9	<25.1 25.1			
Total TPH		<25.0 25.0	<24.9 24.9	<25.1 25.1			

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 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS68**
Lab Sample Id: 636274-001

Matrix: Soil
Date Collected: 09.04.19 10.15

Date Received: 09.06.19 16.10
Sample Depth: 4.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100920

Date Prep: 09.09.19 09.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	28.2	9.90	mg/kg	09.09.19 12.57		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100946

Date Prep: 09.09.19 10.45

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.09.19 11.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.09.19 11.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.09.19 11.35	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.09.19 11.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	130	%	70-135	09.09.19 11.35		
o-Terphenyl	84-15-1	106	%	70-135	09.09.19 11.35		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS68**
Lab Sample Id: 636274-001

Matrix: Soil
Date Collected: 09.04.19 10.15

Date Received: 09.06.19 16.10
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DTH

Analyst: DTH

Seq Number: 3100944

Date Prep: 09.09.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.09.19 12.49	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.09.19 12.49	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.09.19 12.49	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.09.19 12.49	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.09.19 12.49	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.09.19 12.49	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.09.19 12.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	09.09.19 12.49		
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.09.19 12.49		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS69** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636274-002 Date Collected: 09.04.19 10.20 Sample Depth: 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.09.19 09.09 Basis: Wet Weight
 Seq Number: 3100920

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	49.8	10.0	mg/kg	09.09.19 13.16		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.09.19 10.45 Basis: Wet Weight
 Seq Number: 3100946

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.09.19 13.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	286	25.1	mg/kg	09.09.19 13.39		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.09.19 13.39	U	1
Total TPH	PHC635	286	25.1	mg/kg	09.09.19 13.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	130	%	70-135	09.09.19 13.39	
o-Terphenyl	84-15-1	122	%	70-135	09.09.19 13.39	



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS69**
Lab Sample Id: 636274-002

Matrix: Soil
Date Collected: 09.04.19 10.20

Date Received: 09.06.19 16.10
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.09.19 11.00

Basis: Wet Weight

Seq Number: 3100944

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.101	0.101	mg/kg	09.09.19 17.06	U	100
Toluene	108-88-3	0.121	0.101	mg/kg	09.09.19 17.06		100
Ethylbenzene	100-41-4	<0.101	0.101	mg/kg	09.09.19 17.06	U	100
m,p-Xylenes	179601-23-1	0.352	0.202	mg/kg	09.09.19 17.06		100
o-Xylene	95-47-6	0.292	0.101	mg/kg	09.09.19 17.06		100
Total Xylenes	1330-20-7	0.644	0.101	mg/kg	09.09.19 17.06		100
Total BTEX		0.765	0.101	mg/kg	09.09.19 17.06		100
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	09.09.19 17.06		
1,4-Difluorobenzene	540-36-3	95	%	70-130	09.09.19 17.06		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS70** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636274-003 Date Collected: 09.04.19 10.25 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.09.19 09.09 Basis: Wet Weight
 Seq Number: 3100920

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	595	20.2	mg/kg	09.09.19 13.22		2

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.09.19 10.45 Basis: Wet Weight
 Seq Number: 3100946

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.09.19 13.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.09.19 13.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.09.19 13.59	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.09.19 13.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	122	%	70-135	09.09.19 13.59		
o-Terphenyl	84-15-1	102	%	70-135	09.09.19 13.59		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS70**
Lab Sample Id: 636274-003

Matrix: Soil
Date Collected: 09.04.19 10.25

Date Received: 09.06.19 16.10
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.09.19 11.00

Basis: Wet Weight

Seq Number: 3100944

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.09.19 14.08	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.09.19 14.08	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.09.19 14.08	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.09.19 14.08	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.09.19 14.08	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.09.19 14.08	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.09.19 14.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	09.09.19 14.08		
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.09.19 14.08		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS71** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636274-004 Date Collected: 09.04.19 10.45 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.09.19 09.09 Basis: Wet Weight
 Seq Number: 3100920

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	179	10.0	mg/kg	09.09.19 13.29		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.09.19 10.45 Basis: Wet Weight
 Seq Number: 3100946

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.09.19 14.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	133	24.9	mg/kg	09.09.19 14.20		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.09.19 14.20	U	1
Total TPH	PHC635	133	24.9	mg/kg	09.09.19 14.20		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	125	%	70-135	09.09.19 14.20		
o-Terphenyl	84-15-1	116	%	70-135	09.09.19 14.20		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS71**
Lab Sample Id: 636274-004

Matrix: Soil
Date Collected: 09.04.19 10.45

Date Received: 09.06.19 16.10
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.09.19 11.00

Basis: Wet Weight

Seq Number: 3100944

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00994	0.00994	mg/kg	09.09.19 16.46	U	10
Toluene	108-88-3	<0.00994	0.00994	mg/kg	09.09.19 16.46	U	10
Ethylbenzene	100-41-4	0.0111	0.00994	mg/kg	09.09.19 16.46		10
m,p-Xylenes	179601-23-1	0.0336	0.0199	mg/kg	09.09.19 16.46		10
o-Xylene	95-47-6	0.0231	0.00994	mg/kg	09.09.19 16.46		10
Total Xylenes	1330-20-7	0.0567	0.00994	mg/kg	09.09.19 16.46		10
Total BTEX		0.0678	0.00994	mg/kg	09.09.19 16.46		10
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	09.09.19 16.46		
1,4-Difluorobenzene	540-36-3	93	%	70-130	09.09.19 16.46		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS72** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636274-005 Date Collected: 09.04.19 10.50 Sample Depth: 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.09.19 09.09 Basis: Wet Weight
 Seq Number: 3100920

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	51.7	10.0	mg/kg	09.09.19 13.35		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.09.19 10.45 Basis: Wet Weight
 Seq Number: 3100946

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	292	25.1	mg/kg	09.09.19 14.40		1
Diesel Range Organics (DRO)	C10C28DRO	1070	25.1	mg/kg	09.09.19 14.40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.09.19 14.40	U	1
Total TPH	PHC635	1360	25.1	mg/kg	09.09.19 14.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	136	%	70-135	09.09.19 14.40	**
o-Terphenyl	84-15-1	136	%	70-135	09.09.19 14.40	**



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS72**
Lab Sample Id: 636274-005

Matrix: Soil
Date Collected: 09.04.19 10.50

Date Received: 09.06.19 16.10
Sample Depth: 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.09.19 11.00

Basis: Wet Weight

Seq Number: 3100944

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.101	0.101	mg/kg	09.09.19 15.47	U	100
Toluene	108-88-3	0.741	0.101	mg/kg	09.09.19 15.47		100
Ethylbenzene	100-41-4	1.30	0.101	mg/kg	09.09.19 15.47		100
m,p-Xylenes	179601-23-1	6.12	0.201	mg/kg	09.09.19 15.47		100
o-Xylene	95-47-6	4.29	0.101	mg/kg	09.09.19 15.47		100
Total Xylenes	1330-20-7	10.4	0.101	mg/kg	09.09.19 15.47		100
Total BTEX		12.5	0.101	mg/kg	09.09.19 15.47		100
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	123	%	70-130	09.09.19 15.47		
4-Bromofluorobenzene	460-00-4	127	%	70-130	09.09.19 15.47		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS73** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636274-006 Date Collected: 09.04.19 10.55 Sample Depth: 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.09.19 09.09 Basis: Wet Weight
 Seq Number: 3100920

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2770	99.8	mg/kg	09.09.19 13.54		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.09.19 10.45 Basis: Wet Weight
 Seq Number: 3100946

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.09.19 15.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.09.19 15.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.09.19 15.01	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.09.19 15.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	120	%	70-135	09.09.19 15.01		
o-Terphenyl	84-15-1	102	%	70-135	09.09.19 15.01		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS73**
Lab Sample Id: 636274-006

Matrix: Soil
Date Collected: 09.04.19 10.55

Date Received: 09.06.19 16.10
Sample Depth: 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.09.19 11.00

Basis: Wet Weight

Seq Number: 3100944

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00994	0.00994	mg/kg	09.09.19 15.27	U	10
Toluene	108-88-3	<0.00994	0.00994	mg/kg	09.09.19 15.27	U	10
Ethylbenzene	100-41-4	<0.00994	0.00994	mg/kg	09.09.19 15.27	U	10
m,p-Xylenes	179601-23-1	<0.0199	0.0199	mg/kg	09.09.19 15.27	U	10
o-Xylene	95-47-6	<0.00994	0.00994	mg/kg	09.09.19 15.27	U	10
Total Xylenes	1330-20-7	<0.00994	0.00994	mg/kg	09.09.19 15.27	U	10
Total BTEX		<0.00994	0.00994	mg/kg	09.09.19 15.27	U	10
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	70-130	09.09.19 15.27		
4-Bromofluorobenzene	460-00-4	103	%	70-130	09.09.19 15.27		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS74** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636274-007 Date Collected: 09.04.19 11.00 Sample Depth: 55 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.09.19 09.09 Basis: Wet Weight
 Seq Number: 3100920

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	316	9.90	mg/kg	09.09.19 14.01		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.09.19 10.45 Basis: Wet Weight
 Seq Number: 3100946

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.09.19 15.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.09.19 15.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.09.19 15.22	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.09.19 15.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	116	%	70-135	09.09.19 15.22		
o-Terphenyl	84-15-1	96	%	70-135	09.09.19 15.22		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS74**
Lab Sample Id: 636274-007

Matrix: Soil
Date Collected: 09.04.19 11.00

Date Received: 09.06.19 16.10
Sample Depth: 55 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.09.19 11.00

Basis: Wet Weight

Seq Number: 3100944

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.09.19 14.28	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.09.19 14.28	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.09.19 14.28	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	09.09.19 14.28	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.09.19 14.28	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.09.19 14.28	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.09.19 14.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	09.09.19 14.28		
1,4-Difluorobenzene	540-36-3	108	%	70-130	09.09.19 14.28		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS75** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636274-008 Date Collected: 09.04.19 11.20 Sample Depth: 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.09.19 09.09 Basis: Wet Weight
 Seq Number: 3100920

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1290	99.4	mg/kg	09.09.19 16.56	D	10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.09.19 10.45 Basis: Wet Weight
 Seq Number: 3100946

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.09.19 16.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.09.19 16.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.09.19 16.03	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.09.19 16.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	120	%	70-135	09.09.19 16.03		
o-Terphenyl	84-15-1	100	%	70-135	09.09.19 16.03		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS75**
Lab Sample Id: 636274-008

Matrix: Soil
Date Collected: 09.04.19 11.20

Date Received: 09.06.19 16.10
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.09.19 11.00

Basis: Wet Weight

Seq Number: 3100944

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.09.19 14.47	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.09.19 14.47	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.09.19 14.47	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.09.19 14.47	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.09.19 14.47	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.09.19 14.47	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.09.19 14.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.09.19 14.47		
4-Bromofluorobenzene	460-00-4	114	%	70-130	09.09.19 14.47		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS76** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636274-009 Date Collected: 09.04.19 11.25 Sample Depth: 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.09.19 09.09 Basis: Wet Weight
 Seq Number: 3100920

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1860	99.8	mg/kg	09.09.19 14.14		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.09.19 10.45 Basis: Wet Weight
 Seq Number: 3100946

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.09.19 16.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.09.19 16.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.09.19 16.24	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.09.19 16.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	121	%	70-135	09.09.19 16.24		
o-Terphenyl	84-15-1	101	%	70-135	09.09.19 16.24		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS76**
Lab Sample Id: 636274-009

Matrix: Soil
Date Collected: 09.04.19 11.25

Date Received: 09.06.19 16.10
Sample Depth: 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.09.19 11.00

Basis: Wet Weight

Seq Number: 3100944

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	09.09.19 15.07	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	09.09.19 15.07	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	09.09.19 15.07	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	09.09.19 15.07	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	09.09.19 15.07	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	09.09.19 15.07	U	1
Total BTEX		<0.000996	0.000996	mg/kg	09.09.19 15.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	09.09.19 15.07		
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.09.19 15.07		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 Obs Well #1

Analytical Method: Chloride by EPA 300

Seq Number: 3100920

MB Sample Id: 7685769-1-BLK

Matrix: Solid

LCS Sample Id: 7685769-1-BKS

Prep Method: E300P

Date Prep: 09.09.19

LCSD Sample Id: 7685769-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	261	104	262	105	80-120	0	20	mg/kg	09.09.19 12:44	

Analytical Method: Chloride by EPA 300

Seq Number: 3100920

Parent Sample Id: 636274-001

Matrix: Soil

MS Sample Id: 636274-001 S

Prep Method: E300P

Date Prep: 09.09.19

MSD Sample Id: 636274-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	28.2	200	246	109	250	111	80-120	2	20	mg/kg	09.09.19 13:03	

Analytical Method: Chloride by EPA 300

Seq Number: 3100920

Parent Sample Id: 636297-006

Matrix: Solid

MS Sample Id: 636297-006 S

Prep Method: E300P

Date Prep: 09.09.19

MSD Sample Id: 636297-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	350	398	863	129	862	128	80-120	0	20	mg/kg	09.09.19 15:31	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100946

MB Sample Id: 7685792-1-BLK

Matrix: Solid

LCS Sample Id: 7685792-1-BKS

Prep Method: SW8015P

Date Prep: 09.09.19

LCSD Sample Id: 7685792-1-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)	<25.0	1000	930	93	910	91	70-135	2	35	mg/kg	09.09.19 10:54	
Diesel Range Organics (DRO)	<25.0	1000	881	88	846	85	70-135	4	35	mg/kg	09.09.19 10:54	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		130		133		70-135	%	09.09.19 10:54
o-Terphenyl	99		118		116		70-135	%	09.09.19 10:54

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

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

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

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



LT Environmental, Inc.

Remuda 25 Obs Well #1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100946

Parent Sample Id: 636274-001

Matrix: Soil

MS Sample Id: 636274-001 S

Prep Method: SW8015P

Date Prep: 09.09.19

MSD Sample Id: 636274-001 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)	<25.1	1010	909	90	981	98	70-135	8	35	mg/kg	09.09.19 11:55	
Diesel Range Organics (DRO)	<25.1	1010	839	83	912	91	70-135	8	35	mg/kg	09.09.19 11:55	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	138	**	143	**	70-135	%	09.09.19 11:55
o-Terphenyl	117		120		70-135	%	09.09.19 11:55

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100944

MB Sample Id: 7685859-1-BLK

Matrix: Solid

LCS Sample Id: 7685859-1-BKS

Prep Method: SW5030B

Date Prep: 09.09.19

LCSD Sample Id: 7685859-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0873	87	0.0876	88	70-130	0	35	mg/kg	09.09.19 10:50	
Toluene	<0.00100	0.100	0.0895	90	0.0913	91	70-130	2	35	mg/kg	09.09.19 10:50	
Ethylbenzene	<0.00100	0.100	0.110	110	0.113	113	71-129	3	35	mg/kg	09.09.19 10:50	
m,p-Xylenes	<0.00200	0.200	0.228	114	0.233	117	70-135	2	35	mg/kg	09.09.19 10:50	
o-Xylene	<0.00100	0.100	0.115	115	0.118	118	71-133	3	35	mg/kg	09.09.19 10:50	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		107		102		70-130	%	09.09.19 10:50
4-Bromofluorobenzene	111		125		121		70-130	%	09.09.19 10:50

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100944

Parent Sample Id: 636274-001

Matrix: Solid

MS Sample Id: 636274-001 S

Prep Method: SW5030B

Date Prep: 09.09.19

MSD Sample Id: 636274-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0845	85	0.0892	89	70-130	5	35	mg/kg	09.09.19 13:08	
Toluene	<0.00100	0.100	0.0854	85	0.0870	87	70-130	2	35	mg/kg	09.09.19 13:08	
Ethylbenzene	<0.00100	0.100	0.0936	94	0.107	107	71-129	13	35	mg/kg	09.09.19 13:08	
m,p-Xylenes	<0.00200	0.200	0.194	97	0.222	111	70-135	13	35	mg/kg	09.09.19 13:08	
o-Xylene	<0.00100	0.100	0.100	100	0.114	114	71-133	13	35	mg/kg	09.09.19 13:08	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		113		70-130	%	09.09.19 13:08
4-Bromofluorobenzene	124		130		70-130	%	09.09.19 13:08

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.:

636274

Midland TX (332-704-5440) EL Paso TX (915)585-3443 Lubbock TX (806)784-1286
Phoenix AZ (480)355-0900 Atlanta GA (770)445-8800 Tampa FL (813)76-392-7550

www.xenico.com

Page 7 of 11

Project Manager:	Dan Moir	Bill To: (if different)	Kyle Litvel
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:	Carsbad, NM
Phone:	432.704.5178	Email:	dmoir@ltenv.com kmcatee@xtoenv.com

www.xsteno.com Page _____ of _____

Work Order Comments					
Program: USTPST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐ State of Project:					
Reporting Level II	☐	Level III	☐	UST/UST	☐
PRP	☐	Level IV	☐		
Deliverables EDO	☐	Adapt	☐	Other	

[illegible]

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EP)	BTEX (EP)	Chloride	Sample Comments										
FS68	S	07/04/11	1015	4.5'	1	X	X	X	Composite										
FS69			1020	4.5'		X	X	X											
FS70			1025	5'		X	X	X											
FS71			1045	5'		X	X	X											
FS72			1050	4.5'		X	X	X											
FS73			1055	5.5'		X	X	X											
FS74			1100	5'		X	X	X											
FS75			1120	4.5'		X	X	X											
FS76			1125	5.5'		X	X	X											
										Composite									

Total 200.7 / 6010	200.8 / 6020:	
8RCRA	13PPM	Texas 11
		Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SnO 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 / 2461 / 7470 / 7471: Hg

over, signature on this document is a relinquishment of sample constitutes a valid purchase order from client company to Xentco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xentco 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 Xentco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xentco, 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
		9/16/17 10:10			



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 09/06/2019 04:10:00 PM

Work Order #: 636274

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T NM007

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	No
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Martha Castro

Date: 09/09/2019

Checklist reviewed by:

Jessica Kramer

Date: 09/09/2019

Analytical Report 636274

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda 25 Obs Well #1

11-SEP-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

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

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



11-SEP-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **636274**

Remuda 25 Obs Well #1

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 636274. 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. 636274 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

**Sample Cross Reference 636274****LT Environmental, Inc., Arvada, CO**

Remuda 25 Obs Well #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS68	S	09-04-19 10:15	4.5 ft	636274-001
FS69	S	09-04-19 10:20	4.5 ft	636274-002
FS70	S	09-04-19 10:25	5 ft	636274-003
FS71	S	09-04-19 10:45	5 ft	636274-004
FS72	S	09-04-19 10:50	5.5 ft	636274-005
FS73	S	09-04-19 10:55	5.5 ft	636274-006
FS74	S	09-04-19 11:00	5.5 ft	636274-007
FS75	S	09-04-19 11:20	4.5 ft	636274-008
FS76	S	09-04-19 11:25	5.5 ft	636274-009



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 25 Obs Well #1

Project ID:
Work Order Number(s): 636274

Report Date: 11-SEP-19
Date Received: 09/06/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3100944 BTEX by EPA 8021B

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

Batch: LBA-3100946 TPH by SW8015 Mod

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

Samples affected are: 636274-001 S,636274-001 SD,636274-005.

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

Samples affected are: 636274-005.



Certificate of Analysis Summary 636274

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Sep-06-19 04:10 pm

Report Date: 11-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636274-001	636274-002	636274-003	636274-004	636274-005	636274-006
	<i>Field Id:</i>	FS68	FS69	FS70	FS71	FS72	FS73
	<i>Depth:</i>	4.5- ft	4.5- ft	5- ft	5- ft	5.5- ft	5.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-04-19 10:15	Sep-04-19 10:20	Sep-04-19 10:25	Sep-04-19 10:45	Sep-04-19 10:50	Sep-04-19 10:55
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-09-19 11:00	Sep-09-19 11:00	Sep-09-19 11:00	Sep-09-19 11:00	Sep-09-19 11:00	Sep-09-19 11:00
	<i>Analyzed:</i>	Sep-09-19 12:49	Sep-09-19 17:06	Sep-09-19 14:08	Sep-09-19 16:46	Sep-09-19 15:47	Sep-09-19 15:27
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00101 0.00101	<0.101 0.101	<0.00101 0.00101	<0.00994 0.00994	<0.101 0.101	<0.00994 0.00994
Toluene		<0.00101 0.00101	0.121 0.101	<0.00101 0.00101	<0.00994 0.00994	0.741 0.101	<0.00994 0.00994
Ethylbenzene		<0.00101 0.00101	<0.101 0.101	<0.00101 0.00101	0.0111 0.00994	1.30 0.101	<0.00994 0.00994
m,p-Xylenes		<0.00202 0.00202	0.352 0.202	<0.00201 0.00201	0.0336 0.0199	6.12 0.201	<0.0199 0.0199
o-Xylene		<0.00101 0.00101	0.292 0.101	<0.00101 0.00101	0.0231 0.00994	4.29 0.101	<0.00994 0.00994
Total Xylenes		<0.00101 0.00101	0.644 0.101	<0.00101 0.00101	0.0567 0.00994	10.4 0.101	<0.00994 0.00994
Total BTEX		<0.00101 0.00101	0.765 0.101	<0.00101 0.00101	0.0678 0.00994	12.5 0.101	<0.00994 0.00994
Chloride by EPA 300	<i>Extracted:</i>	Sep-09-19 09:09	Sep-09-19 09:09	Sep-09-19 09:09	Sep-09-19 09:09	Sep-09-19 09:09	Sep-09-19 09:09
	<i>Analyzed:</i>	Sep-09-19 12:57	Sep-09-19 13:16	Sep-09-19 13:22	Sep-09-19 13:29	Sep-09-19 13:35	Sep-09-19 13:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		28.2 9.90	49.8 10.0	595 20.2	179 10.0	51.7 10.0	2770 99.8
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-09-19 10:45	Sep-09-19 10:45	Sep-09-19 10:45	Sep-09-19 10:45	Sep-09-19 10:45	Sep-09-19 10:45
	<i>Analyzed:</i>	Sep-09-19 11:35	Sep-09-19 13:39	Sep-09-19 13:59	Sep-09-19 14:20	Sep-09-19 14:40	Sep-09-19 15:01
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<25.1 25.1	<25.1 25.1	<25.1 25.1	<24.9 24.9	292 25.1	<25.1 25.1
Diesel Range Organics (DRO)		<25.1 25.1	286 25.1	<25.1 25.1	133 24.9	1070 25.1	<25.1 25.1
Motor Oil Range Hydrocarbons (MRO)		<25.1 25.1	<25.1 25.1	<25.1 25.1	<24.9 24.9	<25.1 25.1	<25.1 25.1
Total TPH		<25.1 25.1	286 25.1	<25.1 25.1	133 24.9	1360 25.1	<25.1 25.1

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

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 636274

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Sep-06-19 04:10 pm

Report Date: 11-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636274-007	636274-008	636274-009			
	<i>Field Id:</i>	FS74	FS75	FS76			
	<i>Depth:</i>	5.5- ft	4.5- ft	5.5- ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Sep-04-19 11:00	Sep-04-19 11:20	Sep-04-19 11:25			
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-09-19 11:00	Sep-09-19 11:00	Sep-09-19 11:00			
	<i>Analyzed:</i>	Sep-09-19 14:28	Sep-09-19 14:47	Sep-09-19 15:07			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00100 0.00100	<0.00101 0.00101	<0.000996 0.000996			
Toluene		<0.00100 0.00100	<0.00101 0.00101	<0.000996 0.000996			
Ethylbenzene		<0.00100 0.00100	<0.00101 0.00101	<0.000996 0.000996			
m,p-Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199			
o-Xylene		<0.00100 0.00100	<0.00101 0.00101	<0.000996 0.000996			
Total Xylenes		<0.00100 0.00100	<0.00101 0.00101	<0.000996 0.000996			
Total BTEX		<0.00100 0.00100	<0.00101 0.00101	<0.000996 0.000996			
Chloride by EPA 300	<i>Extracted:</i>	Sep-09-19 09:09	Sep-09-19 09:09	Sep-09-19 09:09			
	<i>Analyzed:</i>	Sep-09-19 14:01	Sep-09-19 14:07	Sep-09-19 14:14			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		316 9.90	1290 D 99.4	1860 99.8			
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-09-19 10:45	Sep-09-19 10:45	Sep-09-19 10:45			
	<i>Analyzed:</i>	Sep-09-19 15:22	Sep-09-19 16:03	Sep-09-19 16:24			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<25.0 25.0	<24.9 24.9	<25.1 25.1			
Diesel Range Organics (DRO)		<25.0 25.0	<24.9 24.9	<25.1 25.1			
Motor Oil Range Hydrocarbons (MRO)		<25.0 25.0	<24.9 24.9	<25.1 25.1			
Total TPH		<25.0 25.0	<24.9 24.9	<25.1 25.1			

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 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS68**
Lab Sample Id: 636274-001

Matrix: Soil
Date Collected: 09.04.19 10.15

Date Received: 09.06.19 16.10
Sample Depth: 4.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100920

Date Prep: 09.09.19 09.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	28.2	9.90	mg/kg	09.09.19 12.57		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100946

Date Prep: 09.09.19 10.45

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.09.19 11.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.09.19 11.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.09.19 11.35	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.09.19 11.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	130	%	70-135	09.09.19 11.35	
o-Terphenyl	84-15-1	106	%	70-135	09.09.19 11.35	



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS68**
Lab Sample Id: 636274-001

Matrix: Soil
Date Collected: 09.04.19 10.15

Date Received: 09.06.19 16.10
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.09.19 11.00

Basis: Wet Weight

Seq Number: 3100944

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.09.19 12.49	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.09.19 12.49	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.09.19 12.49	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.09.19 12.49	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.09.19 12.49	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.09.19 12.49	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.09.19 12.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	09.09.19 12.49		
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.09.19 12.49		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS69**
Lab Sample Id: 636274-002

Matrix: Soil
Date Collected: 09.04.19 10.20

Date Received: 09.06.19 16.10
Sample Depth: 4.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100920

Date Prep: 09.09.19 09.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	49.8	10.0	mg/kg	09.09.19 13.16		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100946

Date Prep: 09.09.19 10.45

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.09.19 13.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	286	25.1	mg/kg	09.09.19 13.39		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.09.19 13.39	U	1
Total TPH	PHC635	286	25.1	mg/kg	09.09.19 13.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	130	%	70-135	09.09.19 13.39	
o-Terphenyl	84-15-1	122	%	70-135	09.09.19 13.39	



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS69**
Lab Sample Id: 636274-002

Matrix: Soil
Date Collected: 09.04.19 10.20

Date Received: 09.06.19 16.10
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DTH

Analyst: DTH

Seq Number: 3100944

Date Prep: 09.09.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.101	0.101	mg/kg	09.09.19 17.06	U	100
Toluene	108-88-3	0.121	0.101	mg/kg	09.09.19 17.06		100
Ethylbenzene	100-41-4	<0.101	0.101	mg/kg	09.09.19 17.06	U	100
m,p-Xylenes	179601-23-1	0.352	0.202	mg/kg	09.09.19 17.06		100
o-Xylene	95-47-6	0.292	0.101	mg/kg	09.09.19 17.06		100
Total Xylenes	1330-20-7	0.644	0.101	mg/kg	09.09.19 17.06		100
Total BTEX		0.765	0.101	mg/kg	09.09.19 17.06		100
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	09.09.19 17.06		
1,4-Difluorobenzene	540-36-3	95	%	70-130	09.09.19 17.06		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS70** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636274-003 Date Collected: 09.04.19 10.25 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.09.19 09.09 Basis: Wet Weight
 Seq Number: 3100920

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	595	20.2	mg/kg	09.09.19 13.22		2

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.09.19 10.45 Basis: Wet Weight
 Seq Number: 3100946

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.09.19 13.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.09.19 13.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.09.19 13.59	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.09.19 13.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	09.09.19 13.59	
o-Terphenyl	84-15-1	102	%	70-135	09.09.19 13.59	



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS70**
Lab Sample Id: 636274-003

Matrix: Soil
Date Collected: 09.04.19 10.25

Date Received: 09.06.19 16.10
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.09.19 11.00

Basis: Wet Weight

Seq Number: 3100944

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.09.19 14.08	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.09.19 14.08	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.09.19 14.08	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.09.19 14.08	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.09.19 14.08	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.09.19 14.08	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.09.19 14.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	09.09.19 14.08		
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.09.19 14.08		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS71**
Lab Sample Id: 636274-004

Matrix: Soil
Date Collected: 09.04.19 10.45

Date Received: 09.06.19 16.10
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100920

Date Prep: 09.09.19 09.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	179	10.0	mg/kg	09.09.19 13.29		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100946

Date Prep: 09.09.19 10.45

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.09.19 14.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	133	24.9	mg/kg	09.09.19 14.20		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.09.19 14.20	U	1
Total TPH	PHC635	133	24.9	mg/kg	09.09.19 14.20		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	09.09.19 14.20	
o-Terphenyl	84-15-1	116	%	70-135	09.09.19 14.20	



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS71**
Lab Sample Id: 636274-004

Matrix: Soil
Date Collected: 09.04.19 10.45

Date Received: 09.06.19 16.10
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.09.19 11.00

Basis: Wet Weight

Seq Number: 3100944

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00994	0.00994	mg/kg	09.09.19 16.46	U	10
Toluene	108-88-3	<0.00994	0.00994	mg/kg	09.09.19 16.46	U	10
Ethylbenzene	100-41-4	0.0111	0.00994	mg/kg	09.09.19 16.46		10
m,p-Xylenes	179601-23-1	0.0336	0.0199	mg/kg	09.09.19 16.46		10
o-Xylene	95-47-6	0.0231	0.00994	mg/kg	09.09.19 16.46		10
Total Xylenes	1330-20-7	0.0567	0.00994	mg/kg	09.09.19 16.46		10
Total BTEX		0.0678	0.00994	mg/kg	09.09.19 16.46		10
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	09.09.19 16.46		
1,4-Difluorobenzene	540-36-3	93	%	70-130	09.09.19 16.46		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS72** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636274-005 Date Collected: 09.04.19 10.50 Sample Depth: 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.09.19 09.09 Basis: Wet Weight
 Seq Number: 3100920

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	51.7	10.0	mg/kg	09.09.19 13.35		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.09.19 10.45 Basis: Wet Weight
 Seq Number: 3100946

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	292	25.1	mg/kg	09.09.19 14.40		1
Diesel Range Organics (DRO)	C10C28DRO	1070	25.1	mg/kg	09.09.19 14.40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.09.19 14.40	U	1
Total TPH	PHC635	1360	25.1	mg/kg	09.09.19 14.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	136	%	70-135	09.09.19 14.40	**
o-Terphenyl	84-15-1	136	%	70-135	09.09.19 14.40	**



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS72**
Lab Sample Id: 636274-005

Matrix: Soil
Date Collected: 09.04.19 10.50

Date Received: 09.06.19 16.10
Sample Depth: 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.09.19 11.00

Basis: Wet Weight

Seq Number: 3100944

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.101	0.101	mg/kg	09.09.19 15.47	U	100
Toluene	108-88-3	0.741	0.101	mg/kg	09.09.19 15.47		100
Ethylbenzene	100-41-4	1.30	0.101	mg/kg	09.09.19 15.47		100
m,p-Xylenes	179601-23-1	6.12	0.201	mg/kg	09.09.19 15.47		100
o-Xylene	95-47-6	4.29	0.101	mg/kg	09.09.19 15.47		100
Total Xylenes	1330-20-7	10.4	0.101	mg/kg	09.09.19 15.47		100
Total BTEX		12.5	0.101	mg/kg	09.09.19 15.47		100
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	123	%	70-130	09.09.19 15.47		
4-Bromofluorobenzene	460-00-4	127	%	70-130	09.09.19 15.47		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS73**
Lab Sample Id: 636274-006

Matrix: Soil
Date Collected: 09.04.19 10.55

Date Received: 09.06.19 16.10
Sample Depth: 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100920

Date Prep: 09.09.19 09.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2770	99.8	mg/kg	09.09.19 13.54		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100946

Date Prep: 09.09.19 10.45

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.09.19 15.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.09.19 15.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.09.19 15.01	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.09.19 15.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	09.09.19 15.01	
o-Terphenyl	84-15-1	102	%	70-135	09.09.19 15.01	



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS73**
Lab Sample Id: 636274-006

Matrix: Soil
Date Collected: 09.04.19 10.55

Date Received: 09.06.19 16.10
Sample Depth: 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.09.19 11.00

Basis: Wet Weight

Seq Number: 3100944

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00994	0.00994	mg/kg	09.09.19 15.27	U	10
Toluene	108-88-3	<0.00994	0.00994	mg/kg	09.09.19 15.27	U	10
Ethylbenzene	100-41-4	<0.00994	0.00994	mg/kg	09.09.19 15.27	U	10
m,p-Xylenes	179601-23-1	<0.0199	0.0199	mg/kg	09.09.19 15.27	U	10
o-Xylene	95-47-6	<0.00994	0.00994	mg/kg	09.09.19 15.27	U	10
Total Xylenes	1330-20-7	<0.00994	0.00994	mg/kg	09.09.19 15.27	U	10
Total BTEX		<0.00994	0.00994	mg/kg	09.09.19 15.27	U	10
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	70-130	09.09.19 15.27		
4-Bromofluorobenzene	460-00-4	103	%	70-130	09.09.19 15.27		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS74**
Lab Sample Id: 636274-007

Matrix: Soil
Date Collected: 09.04.19 11.00

Date Received: 09.06.19 16.10
Sample Depth: 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100920

Date Prep: 09.09.19 09.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	316	9.90	mg/kg	09.09.19 14.01		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100946

Date Prep: 09.09.19 10.45

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.09.19 15.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.09.19 15.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.09.19 15.22	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.09.19 15.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	09.09.19 15.22	
o-Terphenyl	84-15-1	96	%	70-135	09.09.19 15.22	



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS74**
Lab Sample Id: 636274-007

Matrix: Soil
Date Collected: 09.04.19 11.00

Date Received: 09.06.19 16.10
Sample Depth: 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.09.19 11.00

Basis: Wet Weight

Seq Number: 3100944

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.09.19 14.28	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.09.19 14.28	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.09.19 14.28	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	09.09.19 14.28	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.09.19 14.28	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.09.19 14.28	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.09.19 14.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	09.09.19 14.28		
1,4-Difluorobenzene	540-36-3	108	%	70-130	09.09.19 14.28		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS75** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636274-008 Date Collected: 09.04.19 11.20 Sample Depth: 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.09.19 09.09 Basis: Wet Weight
 Seq Number: 3100920

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1290	99.4	mg/kg	09.09.19 16.56	D	10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.09.19 10.45 Basis: Wet Weight
 Seq Number: 3100946

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.09.19 16.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.09.19 16.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.09.19 16.03	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.09.19 16.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	09.09.19 16.03	
o-Terphenyl	84-15-1	100	%	70-135	09.09.19 16.03	



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS75**
Lab Sample Id: 636274-008

Matrix: Soil
Date Collected: 09.04.19 11.20

Date Received: 09.06.19 16.10
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.09.19 11.00

Basis: Wet Weight

Seq Number: 3100944

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.09.19 14.47	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.09.19 14.47	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.09.19 14.47	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.09.19 14.47	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.09.19 14.47	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.09.19 14.47	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.09.19 14.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.09.19 14.47		
4-Bromofluorobenzene	460-00-4	114	%	70-130	09.09.19 14.47		



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS76** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636274-009 Date Collected: 09.04.19 11.25 Sample Depth: 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.09.19 09.09 Basis: Wet Weight
 Seq Number: 3100920

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1860	99.8	mg/kg	09.09.19 14.14		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.09.19 10.45 Basis: Wet Weight
 Seq Number: 3100946

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.09.19 16.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.09.19 16.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.09.19 16.24	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.09.19 16.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	09.09.19 16.24	
o-Terphenyl	84-15-1	101	%	70-135	09.09.19 16.24	



Certificate of Analytical Results 636274

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **FS76**
Lab Sample Id: 636274-009

Matrix: Soil
Date Collected: 09.04.19 11.25

Date Received: 09.06.19 16.10
Sample Depth: 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.09.19 11.00

Basis: Wet Weight

Seq Number: 3100944

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	09.09.19 15.07	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	09.09.19 15.07	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	09.09.19 15.07	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	09.09.19 15.07	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	09.09.19 15.07	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	09.09.19 15.07	U	1
Total BTEX		<0.000996	0.000996	mg/kg	09.09.19 15.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	09.09.19 15.07		
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.09.19 15.07		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 Obs Well #1

Analytical Method: Chloride by EPA 300

Seq Number: 3100920

MB Sample Id: 7685769-1-BLK

Matrix: Solid

LCS Sample Id: 7685769-1-BKS

Prep Method: E300P

Date Prep: 09.09.19

LCSD Sample Id: 7685769-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	261	104	262	105	80-120	0	20	mg/kg	09.09.19 12:44	

Analytical Method: Chloride by EPA 300

Seq Number: 3100920

Parent Sample Id: 636274-001

Matrix: Soil

MS Sample Id: 636274-001 S

Prep Method: E300P

Date Prep: 09.09.19

MSD Sample Id: 636274-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	28.2	200	246	109	250	111	80-120	2	20	mg/kg	09.09.19 13:03	

Analytical Method: Chloride by EPA 300

Seq Number: 3100920

Parent Sample Id: 636297-006

Matrix: Solid

MS Sample Id: 636297-006 S

Prep Method: E300P

Date Prep: 09.09.19

MSD Sample Id: 636297-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	350	398	863	129	862	128	80-120	0	20	mg/kg	09.09.19 15:31	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100946

MB Sample Id: 7685792-1-BLK

Matrix: Solid

LCS Sample Id: 7685792-1-BKS

Prep Method: SW8015P

Date Prep: 09.09.19

LCSD Sample Id: 7685792-1-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)	<25.0	1000	930	93	910	91	70-135	2	35	mg/kg	09.09.19 10:54	
Diesel Range Organics (DRO)	<25.0	1000	881	88	846	85	70-135	4	35	mg/kg	09.09.19 10:54	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		130		133		70-135	%	09.09.19 10:54
o-Terphenyl	99		118		116		70-135	%	09.09.19 10:54

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

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

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

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



LT Environmental, Inc.

Remuda 25 Obs Well #1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100946

Parent Sample Id: 636274-001

Matrix: Soil

MS Sample Id: 636274-001 S

Prep Method: SW8015P

Date Prep: 09.09.19

MSD Sample Id: 636274-001 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)	<25.1	1010	909	90	981	98	70-135	8	35	mg/kg	09.09.19 11:55	
Diesel Range Organics (DRO)	<25.1	1010	839	83	912	91	70-135	8	35	mg/kg	09.09.19 11:55	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	138	**	143	**	70-135	%	09.09.19 11:55
o-Terphenyl	117		120		70-135	%	09.09.19 11:55

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100944

MB Sample Id: 7685859-1-BLK

Matrix: Solid

LCS Sample Id: 7685859-1-BKS

Prep Method: SW5030B

Date Prep: 09.09.19

LCSD Sample Id: 7685859-1-BSO

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0873	87	0.0876	88	70-130	0	35	mg/kg	09.09.19 10:50	
Toluene	<0.00100	0.100	0.0895	90	0.0913	91	70-130	2	35	mg/kg	09.09.19 10:50	
Ethylbenzene	<0.00100	0.100	0.110	110	0.113	113	71-129	3	35	mg/kg	09.09.19 10:50	
m,p-Xylenes	<0.00200	0.200	0.228	114	0.233	117	70-135	2	35	mg/kg	09.09.19 10:50	
o-Xylene	<0.00100	0.100	0.115	115	0.118	118	71-133	3	35	mg/kg	09.09.19 10:50	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		107		102		70-130	%	09.09.19 10:50
4-Bromofluorobenzene	111		125		121		70-130	%	09.09.19 10:50

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100944

Parent Sample Id: 636274-001

Matrix: Solid

MS Sample Id: 636274-001 S

Prep Method: SW5030B

Date Prep: 09.09.19

MSD Sample Id: 636274-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0845	85	0.0892	89	70-130	5	35	mg/kg	09.09.19 13:08	
Toluene	<0.00100	0.100	0.0854	85	0.0870	87	70-130	2	35	mg/kg	09.09.19 13:08	
Ethylbenzene	<0.00100	0.100	0.0936	94	0.107	107	71-129	13	35	mg/kg	09.09.19 13:08	
m,p-Xylenes	<0.00200	0.200	0.194	97	0.222	111	70-135	13	35	mg/kg	09.09.19 13:08	
o-Xylene	<0.00100	0.100	0.100	100	0.114	114	71-133	13	35	mg/kg	09.09.19 13:08	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		113		70-130	%	09.09.19 13:08
4-Bromofluorobenzene	124		130		70-130	%	09.09.19 13:08

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:

636274

Houston, TX (281) 240-4200 Dallas, TX (214) 502-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1295

Hobbs, NM (575) 392-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 420-2000

www.xenco.com

Page 1 of 1

Project Manager:	Den McIvor	Bill to: (if other):	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:	Carrizosa, NM
Phone:	432 704 5178	Email:	dmcliv@xenco.com

Program: USTRST	☐ PRP	☐ Brownfields	☐ RC	☐ Superfund
State of Project:				
Reporting Level: I	☐ Level II	☐ Level III	☐ Level IV	☐ Level V
Deliverables: EDO	☐ ADAPT	☐ Other:		

Project Name:	Remuda 25 OBS Well #1	Turn Around	
Project Number:	2 PF-5309	Routine	☐
P.O. Number:		Rush:	46
Sampler's Name:	Robert McAlfee	Due Date:	

Temperature (°C):	8.10	Temp Blank:	Yes	No	Well Ice:	Yes	No
Received Inlet:	Yes	No	Thermometer ID				
Cooler Custody Seals:	Yes	No	Correction Factor:				
Sample Custody Seals:	Yes	No	Total Containers:				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST	Work Order Notes
FS68	S	07/04/11	10:5	4.5'	1	X	X	X		
FS69			10:20	4.5'		X	X	X		
FS70			10:25	5'		X	X	X		
FS71			10:45	5'		X	X	X		
FS72			10:50	5.5'		X	X	X		
FS73			10:55	5.5'		X	X	X		
FS74			11:00	5'		X	X	X		
FS75			11:20	4.5'		X	X	X		
FS76			11:25	5.5'		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 Sn 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

Note: 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>[Signature]</i>	<i>[Signature]</i>	9/16/19 10:10			



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 09/06/2019 04:10:00 PM

Work Order #: 636274

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T NM007

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	No
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Martha Castro

Date: 09/09/2019

Checklist reviewed by:

Jessica Kramer

Date: 09/09/2019

Analytical Report 636292

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda 25 Obs Well#1

11-SEP-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

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

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



11-SEP-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **636292**

Remuda 25 Obs Well#1

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 636292. 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. 636292 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

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 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW01	S	09-04-19 12:45	0 - 5.5 ft	636292-001
SW02	S	09-04-19 12:50	0 - 5.5 ft	636292-002
SW03	S	09-05-19 08:45	0 - 5.5 ft	636292-003
SW04	S	09-05-19 08:50	0 - 5.5 ft	636292-004
SW05	S	09-05-19 08:55	0 - 5.5 ft	636292-005
SW06	S	09-05-19 09:15	0 - 5.5 ft	636292-006
SW07	S	09-05-19 09:20	0 - 5.5 ft	636292-007
SW08	S	09-05-19 09:25	0 - 5.5 ft	636292-008
SW09	S	09-05-19 09:30	0 - 5.5 ft	636292-009
SW10	S	09-05-19 09:35	0 - 5.5 ft	636292-010
SW11	S	09-05-19 09:40	0 - 5.5 ft	636292-011
SW12	S	09-05-19 09:45	0 - 5.5 ft	636292-012
SW13	S	09-05-19 09:50	0 - 5.5 ft	636292-013
SW14	S	09-05-19 09:55	0 - 5.5 ft	636292-014
SW15	S	09-06-19 09:50	0 - 5.5 ft	636292-015
SW16	S	09-06-19 09:55	0 - 5.5 ft	636292-016
SW17	S	09-06-19 10:00	0 - 5.5 ft	636292-017
SW18	S	09-06-19 10:30	0 - 5.5 ft	636292-018
SW19	S	09-06-19 10:35	0 - 5.5 ft	636292-019
SW20	S	09-06-19 10:40	0 - 5.5 ft	636292-020
SW21	S	09-06-19 11:20	0 - 5.5 ft	636292-021
SW22	S	09-06-19 11:30	0 - 5.5 ft	636292-022
SW23	S	09-06-19 11:50	0 - 5.5 ft	636292-023
SW24	S	09-06-19 12:50	0 - 5.5 ft	636292-024
SW25	S	09-06-19 13:00	0 - 5.5 ft	636292-025
SW26	S	09-06-19 13:10	0 - 5.5 ft	636292-026

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: Remuda 25 Obs Well#1**Project ID:
Work Order Number(s): 636292Report Date: 11-SEP-19
Date Received: 09/06/2019**Sample receipt non conformances and comments:**

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3101033 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: 636292-019,636292-018.

Lab Sample ID 636292-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 636292-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020.

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

Batch: LBA-3101038 BTEX by EPA 8021B

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

Samples affected are: 636292-021 S,636292-021 SD,636292-026.

Lab Sample ID 636292-021 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 636292-021, -022, -023, -024, -025, -026.

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

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

Batch: LBA-3101058 TPH by SW8015 Mod

Lab Sample ID 636292-021 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Diesel Range Organics (DRO) recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 636292-021, -022, -023, -024, -025, -026.

The Laboratory Control Sample for Diesel Range Organics (DRO) is within laboratory Control Limits, therefore the data was accepted.



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 25 Obs Well#1

Project ID:

Work Order Number(s): 636292

Report Date: 11-SEP-19

Date Received: 09/06/2019



Certificate of Analysis Summary 636292

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well#1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Sep-06-19 04:10 pm

Report Date: 11-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636292-001	636292-002	636292-003	636292-004	636292-005	636292-006
	<i>Field Id:</i>	SW01	SW02	SW03	SW04	SW05	SW06
	<i>Depth:</i>	0-5.5 ft	0-5.5 ft	0-5.5 ft	0-5.5 ft	0-5.5 ft	0-5.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-04-19 12:45	Sep-04-19 12:50	Sep-05-19 08:45	Sep-05-19 08:50	Sep-05-19 08:55	Sep-05-19 09:15
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Sep-10-19 10:45	Sep-10-19 10:45	Sep-10-19 10:45	Sep-10-19 10:45	Sep-10-19 10:45	Sep-10-19 10:45
	<i>Analyzed:</i>	Sep-10-19 13:07	Sep-10-19 13:27	Sep-10-19 13:47	Sep-10-19 14:07	Sep-10-19 14:28	Sep-10-19 14:48
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
m,p-Xylenes		<0.00398 0.00398	<0.00401 0.00401	0.00633 0.00398	<0.00401 0.00401	<0.00400 0.00400	<0.00397 0.00397
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	0.00633 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	0.00633 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Sep-10-19 14:15	Sep-10-19 14:15	Sep-10-19 14:15	Sep-10-19 14:15	Sep-10-19 14:15	Sep-10-19 14:15
	<i>Analyzed:</i>	Sep-10-19 14:58	Sep-10-19 15:17	Sep-10-19 15:24	Sep-10-19 15:30	Sep-10-19 15:36	Sep-10-19 15:43
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		430 5.01	672 4.97	22.9 5.04	32.5 4.97	270 4.95	33.9 5.04
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Sep-10-19 11:09	Sep-10-19 11:09	Sep-10-19 11:09	Sep-10-19 11:09	Sep-10-19 11:09	Sep-10-19 11:09
	<i>Analyzed:</i>	Sep-10-19 13:08	Sep-10-19 14:06	Sep-10-19 14:26	Sep-10-19 14:46	Sep-10-19 15:05	Sep-10-19 15:25
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<25.0 25.0	<24.9 24.9	126 25.0	<25.0 25.0	<24.9 24.9	<25.0 25.0
Diesel Range Organics (DRO)		<25.0 25.0	<24.9 24.9	2330 25.0	<25.0 25.0	79.7 24.9	39.1 25.0
Motor Oil Range Hydrocarbons (MRO)		<25.0 25.0	<24.9 24.9	331 25.0	<25.0 25.0	<24.9 24.9	<25.0 25.0
Total GRO-DRO		<25.0 25.0	<24.9 24.9	2460 25.0	<25.0 25.0	79.7 24.9	39.1 25.0
Total TPH		<25.0 25.0	<24.9 24.9	2790 25.0	<25.0 25.0	79.7 24.9	39.1 25.0

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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 636292

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well#1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Sep-06-19 04:10 pm

Report Date: 11-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636292-007	636292-008	636292-009	636292-010	636292-011	636292-012
	<i>Field Id:</i>	SW07	SW08	SW09	SW10	SW11	SW12
	<i>Depth:</i>	0-5.5 ft	0-5.5 ft	0-5.5 ft	0-5.5 ft	0-5.5 ft	0-5.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-05-19 09:20	Sep-05-19 09:25	Sep-05-19 09:30	Sep-05-19 09:35	Sep-05-19 09:40	Sep-05-19 09:45
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Sep-10-19 10:45	Sep-10-19 10:45	Sep-10-19 10:45	Sep-10-19 10:45	Sep-10-19 10:45	Sep-10-19 10:45
	<i>Analyzed:</i>	Sep-10-19 15:08	Sep-10-19 15:28	Sep-10-19 15:48	Sep-10-19 16:08	Sep-10-19 17:26	Sep-10-19 17:47
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Toluene		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Ethylbenzene		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
m,p-Xylenes		<0.00397 0.00397	<0.00398 0.00398	<0.00399 0.00399	<0.00398 0.00398	<0.00400 0.00400	<0.00398 0.00398
o-Xylene		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Total Xylenes		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Total BTEX		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Sep-10-19 14:15	Sep-10-19 14:15	Sep-10-19 14:15	Sep-10-19 14:15	Sep-10-19 14:15	Sep-10-19 14:15
	<i>Analyzed:</i>	Sep-10-19 16:02	Sep-10-19 16:08	Sep-10-19 16:14	Sep-10-19 16:21	Sep-10-19 16:27	Sep-10-19 16:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		9.38 5.04	7.60 4.96	10.3 4.99	24.4 5.04	20.9 5.02	390 4.95
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Sep-10-19 11:09	Sep-10-19 11:09	Sep-10-19 11:09	Sep-10-19 11:09	Sep-10-19 11:09	Sep-10-19 11:09
	<i>Analyzed:</i>	Sep-10-19 15:44	Sep-10-19 16:04	Sep-10-19 16:24	Sep-10-19 16:43	Sep-10-19 18:03	Sep-10-19 18:22
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<24.9 24.9	<24.9 24.9	<25.0 25.0	<25.0 25.0	<24.9 24.9	<25.0 25.0
Diesel Range Organics (DRO)		<24.9 24.9	<24.9 24.9	<25.0 25.0	<25.0 25.0	<24.9 24.9	<25.0 25.0
Motor Oil Range Hydrocarbons (MRO)		<24.9 24.9	<24.9 24.9	<25.0 25.0	<25.0 25.0	<24.9 24.9	<25.0 25.0
Total GRO-DRO		<24.9 24.9	<24.9 24.9	<25.0 25.0	<25.0 25.0	<24.9 24.9	<25.0 25.0
Total TPH		<24.9 24.9	<24.9 24.9	<25.0 25.0	<25.0 25.0	<24.9 24.9	<25.0 25.0

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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 636292

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well#1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Sep-06-19 04:10 pm

Report Date: 11-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636292-013	636292-014	636292-015	636292-016	636292-017	636292-018
	<i>Field Id:</i>	SW13	SW14	SW15	SW16	SW17	SW18
	<i>Depth:</i>	0-5.5 ft	0-5.5 ft	0-5.5 ft	0-5.5 ft	0-5.5 ft	0-5.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-05-19 09:50	Sep-05-19 09:55	Sep-06-19 09:50	Sep-06-19 09:55	Sep-06-19 10:00	Sep-06-19 10:30
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Sep-10-19 10:45	Sep-10-19 10:45	Sep-10-19 10:45	Sep-10-19 10:45	Sep-10-19 10:45	Sep-10-19 10:45
	<i>Analyzed:</i>	Sep-10-19 18:07	Sep-10-19 18:27	Sep-10-19 18:47	Sep-10-19 19:07	Sep-10-19 19:27	Sep-10-19 19:47
	<i>Units/RL:</i>	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	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
Toluene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	0.0289 0.00198
m,p-Xylenes		<0.00402 0.00402	<0.00399 0.00399	<0.00399 0.00399	<0.00403 0.00403	<0.00401 0.00401	0.0972 0.00397
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	0.0603 0.00198
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	0.158 0.00198
Total BTEX		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	0.186 0.00198
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Sep-10-19 14:15	Sep-10-19 14:15	Sep-10-19 14:15	Sep-10-19 14:15	Sep-10-19 14:15	Sep-10-19 14:15
	<i>Analyzed:</i>	Sep-10-19 16:52	Sep-10-19 17:11	Sep-10-19 17:18	Sep-10-19 17:43	Sep-10-19 17:50	Sep-10-19 17:56
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		50.9 4.95	274 5.04	27.3 4.96	216 4.98	294 5.04	1030 5.02
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Sep-10-19 11:09	Sep-10-19 11:09	Sep-10-19 11:09	Sep-10-19 11:09	Sep-10-19 11:09	Sep-10-19 11:09
	<i>Analyzed:</i>	Sep-10-19 18:42	Sep-10-19 19:02	Sep-10-19 19:21	Sep-10-19 19:40	Sep-10-19 19:59	Sep-10-19 20:19
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<25.0 25.0	<24.9 24.9	<25.0 25.0	<25.0 25.0	27.6 24.9	493 24.9
Diesel Range Organics (DRO)		<25.0 25.0	<24.9 24.9	862 25.0	237 25.0	1220 24.9	2620 24.9
Motor Oil Range Hydrocarbons (MRO)		<25.0 25.0	<24.9 24.9	144 25.0	33.8 25.0	219 24.9	279 24.9
Total GRO-DRO		<25.0 25.0	<24.9 24.9	862 25.0	237 25.0	1250 24.9	3110 24.9
Total TPH		<25.0 25.0	<24.9 24.9	1010 25.0	271 25.0	1470 24.9	3390 24.9

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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 636292

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well#1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Sep-06-19 04:10 pm

Report Date: 11-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636292-019	636292-020	636292-021	636292-022	636292-023	636292-024
	<i>Field Id:</i>	SW19	SW20	SW21	SW22	SW23	SW24
	<i>Depth:</i>	0-5.5 ft	0-5.5 ft	0-5.5 ft	0-5.5 ft	0-5.5 ft	0-5.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-06-19 10:35	Sep-06-19 10:40	Sep-06-19 11:20	Sep-06-19 11:30	Sep-06-19 11:50	Sep-06-19 12:50
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Sep-10-19 10:45	Sep-10-19 10:45	Sep-10-19 11:00	Sep-10-19 11:00	Sep-10-19 11:00	Sep-10-19 11:00
	<i>Analyzed:</i>	Sep-10-19 20:07	Sep-10-19 20:27	Sep-10-19 23:45	Sep-11-19 00:06	Sep-11-19 00:26	Sep-11-19 00:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Toluene		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Ethylbenzene		0.0381 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
m,p-Xylenes		0.0391 0.00402	<0.00398 0.00398	<0.00401 0.00401	<0.00399 0.00399	<0.00397 0.00397	<0.00401 0.00401
o-Xylene		0.124 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Total Xylenes		0.163 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Total BTEX		0.201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Sep-10-19 14:15	Sep-10-19 14:15	Sep-10-19 14:45	Sep-10-19 14:45	Sep-10-19 14:45	Sep-10-19 14:45
	<i>Analyzed:</i>	Sep-10-19 18:02	Sep-10-19 18:08	Sep-10-19 15:18	Sep-10-19 15:37	Sep-10-19 15:44	Sep-10-19 15:50
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		129 4.98	886 4.97	14.0 5.04	22.2 5.00	15.3 5.01	16.1 5.01
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Sep-10-19 11:09	Sep-10-19 11:09	Sep-10-19 11:30	Sep-10-19 11:30	Sep-10-19 11:30	Sep-10-19 11:30
	<i>Analyzed:</i>	Sep-10-19 20:38	Sep-10-19 20:57	Sep-10-19 22:34	Sep-10-19 23:31	Sep-10-19 23:51	Sep-11-19 00:10
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		565 25.0	<25.0 25.0	<24.9 24.9	<25.0 25.0	<24.9 24.9	<25.0 25.0
Diesel Range Organics (DRO)		3700 25.0	357 25.0	1050 24.9	<25.0 25.0	<24.9 24.9	<25.0 25.0
Motor Oil Range Hydrocarbons (MRO)		464 25.0	43.0 25.0	161 24.9	<25.0 25.0	<24.9 24.9	<25.0 25.0
Total GRO-DRO		4270 25.0	357 25.0	1050 24.9	<25.0 25.0	<24.9 24.9	<25.0 25.0
Total TPH		4730 25.0	400 25.0	1210 24.9	<25.0 25.0	<24.9 24.9	<25.0 25.0

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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 636292

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well#1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Sep-06-19 04:10 pm

Report Date: 11-SEP-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	636292-025	636292-026				
	Field Id:	SW25	SW26				
	Depth:	0-5.5 ft	0-5.5 ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Sep-06-19 13:00	Sep-06-19 13:10				
BTEX by EPA 8021B SUB: T104704400-18-16	Extracted:	Sep-10-19 11:00	Sep-10-19 11:00				
	Analyzed:	Sep-11-19 01:06	Sep-11-19 01:26				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00199 0.00199	0.0326 0.00200				
Toluene		<0.00199 0.00199	3.41 D 0.200				
Ethylbenzene		<0.00199 0.00199	0.276 0.00200				
m,p-Xylenes		<0.00398 0.00398	17.8 D 0.399				
o-Xylene		<0.00199 0.00199	7.52 D 0.200				
Total Xylenes		<0.00199 0.00199	25.3 0.200				
Total BTEX		<0.00199 0.00199	29.0 0.00200				
Chloride by EPA 300 SUB: T104704400-18-16	Extracted:	Sep-10-19 14:45	Sep-10-19 14:45				
	Analyzed:	Sep-10-19 15:57	Sep-10-19 16:16				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		2020 25.3	2000 24.9				
TPH by SW8015 Mod SUB: T104704400-18-16	Extracted:	Sep-10-19 11:30	Sep-10-19 11:30				
	Analyzed:	Sep-11-19 00:29	Sep-11-19 00:49				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<25.0 25.0	1220 24.9				
Diesel Range Organics (DRO)		488 25.0	3060 24.9				
Motor Oil Range Hydrocarbons (MRO)		64.7 25.0	241 24.9				
Total GRO-DRO		488 25.0	4280 24.9				
Total TPH		553 25.0	4520 24.9				

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

Version: 1.0%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW01**
Lab Sample Id: 636292-001

Matrix: Soil
Date Collected: 09.04.19 12.45

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3101053

Date Prep: 09.10.19 14.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	430	5.01	mg/kg	09.10.19 14.58		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3101056

Date Prep: 09.10.19 11.09

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.10.19 13.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.10.19 13.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.10.19 13.08	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.10.19 13.08	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.10.19 13.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	09.10.19 13.08	
o-Terphenyl	84-15-1	92	%	70-135	09.10.19 13.08	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW01**
Lab Sample Id: 636292-001

Matrix: Soil
Date Collected: 09.04.19 12.45

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.10.19 13.07	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.10.19 13.07	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.10.19 13.07	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.10.19 13.07	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.10.19 13.07	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.10.19 13.07	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.10.19 13.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	09.10.19 13.07		
1,4-Difluorobenzene	540-36-3	95	%	70-130	09.10.19 13.07		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW02** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636292-002 Date Collected: 09.04.19 12.50 Sample Depth: 0 - 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 09.10.19 14.15 Basis: Wet Weight
 Seq Number: 3101053 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	672	4.97	mg/kg	09.10.19 15.17		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 09.10.19 11.09 Basis: Wet Weight
 Seq Number: 3101056 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.10.19 14.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.10.19 14.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.10.19 14.06	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.10.19 14.06	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.10.19 14.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	09.10.19 14.06	
o-Terphenyl	84-15-1	90	%	70-135	09.10.19 14.06	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW02**
Lab Sample Id: 636292-002

Matrix: Soil
Date Collected: 09.04.19 12.50

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.10.19 13.27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.10.19 13.27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.10.19 13.27	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.10.19 13.27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.10.19 13.27	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.10.19 13.27	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.10.19 13.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	09.10.19 13.27		
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.10.19 13.27		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW03**
Lab Sample Id: 636292-003

Matrix: Soil
Date Collected: 09.05.19 08.45

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3101053

Date Prep: 09.10.19 14.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.9	5.04	mg/kg	09.10.19 15.24		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3101056

Date Prep: 09.10.19 11.09

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	126	25.0	mg/kg	09.10.19 14.26		1
Diesel Range Organics (DRO)	C10C28DRO	2330	25.0	mg/kg	09.10.19 14.26		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	331	25.0	mg/kg	09.10.19 14.26		1
Total GRO-DRO	PHC628	2460	25.0	mg/kg	09.10.19 14.26		1
Total TPH	PHC635	2790	25.0	mg/kg	09.10.19 14.26		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	09.10.19 14.26	
o-Terphenyl	84-15-1	115	%	70-135	09.10.19 14.26	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW03**
Lab Sample Id: 636292-003

Matrix: Soil
Date Collected: 09.05.19 08.45

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.10.19 13.47	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.10.19 13.47	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.10.19 13.47	U	1
m,p-Xylenes	179601-23-1	0.00633	0.00398	mg/kg	09.10.19 13.47		1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.10.19 13.47	U	1
Total Xylenes	1330-20-7	0.00633	0.00199	mg/kg	09.10.19 13.47		1
Total BTEX		0.00633	0.00199	mg/kg	09.10.19 13.47		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	127	%	70-130	09.10.19 13.47		
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.10.19 13.47		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW04**
Lab Sample Id: 636292-004

Matrix: Soil
Date Collected: 09.05.19 08.50

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3101053

Date Prep: 09.10.19 14.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	32.5	4.97	mg/kg	09.10.19 15.30		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3101056

Date Prep: 09.10.19 11.09

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.10.19 14.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.10.19 14.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.10.19 14.46	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.10.19 14.46	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.10.19 14.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	09.10.19 14.46	
o-Terphenyl	84-15-1	87	%	70-135	09.10.19 14.46	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW04**
Lab Sample Id: 636292-004

Matrix: Soil
Date Collected: 09.05.19 08.50

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.10.19 14.07	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.10.19 14.07	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.10.19 14.07	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.10.19 14.07	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.10.19 14.07	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.10.19 14.07	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.10.19 14.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	09.10.19 14.07		
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.10.19 14.07		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW05** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636292-005 Date Collected: 09.05.19 08.55 Sample Depth: 0 - 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 09.10.19 14.15 Basis: Wet Weight
 Seq Number: 3101053 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	270	4.95	mg/kg	09.10.19 15.36		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 09.10.19 11.09 Basis: Wet Weight
 Seq Number: 3101056 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.10.19 15.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	79.7	24.9	mg/kg	09.10.19 15.05		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.10.19 15.05	U	1
Total GRO-DRO	PHC628	79.7	24.9	mg/kg	09.10.19 15.05		1
Total TPH	PHC635	79.7	24.9	mg/kg	09.10.19 15.05		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	09.10.19 15.05	
o-Terphenyl	84-15-1	87	%	70-135	09.10.19 15.05	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW05**
Lab Sample Id: 636292-005

Matrix: Soil
Date Collected: 09.05.19 08.55

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.10.19 14.28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.10.19 14.28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.10.19 14.28	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	09.10.19 14.28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.10.19 14.28	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.10.19 14.28	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.10.19 14.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.10.19 14.28		
4-Bromofluorobenzene	460-00-4	109	%	70-130	09.10.19 14.28		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW06**
Lab Sample Id: 636292-006

Matrix: Soil
Date Collected: 09.05.19 09.15

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3101053

Date Prep: 09.10.19 14.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	33.9	5.04	mg/kg	09.10.19 15.43		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3101056

Date Prep: 09.10.19 11.09

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.10.19 15.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	39.1	25.0	mg/kg	09.10.19 15.25		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.10.19 15.25	U	1
Total GRO-DRO	PHC628	39.1	25.0	mg/kg	09.10.19 15.25		1
Total TPH	PHC635	39.1	25.0	mg/kg	09.10.19 15.25		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	09.10.19 15.25	
o-Terphenyl	84-15-1	95	%	70-135	09.10.19 15.25	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW06**
Lab Sample Id: 636292-006

Matrix: Soil
Date Collected: 09.05.19 09.15

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	09.10.19 14.48	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.10.19 14.48	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.10.19 14.48	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	09.10.19 14.48	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	09.10.19 14.48	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	09.10.19 14.48	U	1
Total BTEX		<0.00198	0.00198	mg/kg	09.10.19 14.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	09.10.19 14.48		
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.10.19 14.48		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW07**
Lab Sample Id: 636292-007

Matrix: Soil
Date Collected: 09.05.19 09.20

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3101053

Date Prep: 09.10.19 14.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.38	5.04	mg/kg	09.10.19 16.02		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3101056

Date Prep: 09.10.19 11.09

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.10.19 15.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.10.19 15.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.10.19 15.44	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.10.19 15.44	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.10.19 15.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	09.10.19 15.44	
o-Terphenyl	84-15-1	95	%	70-135	09.10.19 15.44	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW07**
Lab Sample Id: 636292-007

Matrix: Soil
Date Collected: 09.05.19 09.20

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	09.10.19 15.08	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.10.19 15.08	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.10.19 15.08	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	09.10.19 15.08	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	09.10.19 15.08	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	09.10.19 15.08	U	1
Total BTEX		<0.00198	0.00198	mg/kg	09.10.19 15.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	09.10.19 15.08		
1,4-Difluorobenzene	540-36-3	99	%	70-130	09.10.19 15.08		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW08** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636292-008 Date Collected: 09.05.19 09.25 Sample Depth: 0 - 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 09.10.19 14.15 Basis: Wet Weight
 Seq Number: 3101053 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.60	4.96	mg/kg	09.10.19 16.08		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 09.10.19 11.09 Basis: Wet Weight
 Seq Number: 3101056 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.10.19 16.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.10.19 16.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.10.19 16.04	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.10.19 16.04	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.10.19 16.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	09.10.19 16.04	
o-Terphenyl	84-15-1	86	%	70-135	09.10.19 16.04	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW08**
Lab Sample Id: 636292-008

Matrix: Soil
Date Collected: 09.05.19 09.25

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.10.19 15.28	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.10.19 15.28	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.10.19 15.28	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.10.19 15.28	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.10.19 15.28	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.10.19 15.28	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.10.19 15.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.10.19 15.28		
4-Bromofluorobenzene	460-00-4	108	%	70-130	09.10.19 15.28		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW09**
Lab Sample Id: 636292-009

Matrix: Soil
Date Collected: 09.05.19 09.30

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3101053

Date Prep: 09.10.19 14.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.3	4.99	mg/kg	09.10.19 16.14		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3101056

Date Prep: 09.10.19 11.09

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.10.19 16.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.10.19 16.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.10.19 16.24	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.10.19 16.24	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.10.19 16.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	09.10.19 16.24	
o-Terphenyl	84-15-1	96	%	70-135	09.10.19 16.24	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW09**
Lab Sample Id: 636292-009

Matrix: Soil
Date Collected: 09.05.19 09.30

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.10.19 15.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.10.19 15.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.10.19 15.48	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.10.19 15.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.10.19 15.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.10.19 15.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.10.19 15.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.10.19 15.48		
4-Bromofluorobenzene	460-00-4	101	%	70-130	09.10.19 15.48		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW10**
Lab Sample Id: 636292-010

Matrix: Soil
Date Collected: 09.05.19 09.35

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3101053

Date Prep: 09.10.19 14.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.4	5.04	mg/kg	09.10.19 16.21		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3101056

Date Prep: 09.10.19 11.09

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.10.19 16.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.10.19 16.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.10.19 16.43	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.10.19 16.43	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.10.19 16.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	09.10.19 16.43	
o-Terphenyl	84-15-1	83	%	70-135	09.10.19 16.43	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW10**
Lab Sample Id: 636292-010

Matrix: Soil
Date Collected: 09.05.19 09.35

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.10.19 16.08	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.10.19 16.08	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.10.19 16.08	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.10.19 16.08	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.10.19 16.08	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.10.19 16.08	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.10.19 16.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	09.10.19 16.08		
1,4-Difluorobenzene	540-36-3	99	%	70-130	09.10.19 16.08		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW11** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636292-011 Date Collected: 09.05.19 09.40 Sample Depth: 0 - 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 09.10.19 14.15 Basis: Wet Weight
 Seq Number: 3101053 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.9	5.02	mg/kg	09.10.19 16.27		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 09.10.19 11.09 Basis: Wet Weight
 Seq Number: 3101056 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.10.19 18.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.10.19 18.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.10.19 18.03	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.10.19 18.03	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.10.19 18.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	09.10.19 18.03	
o-Terphenyl	84-15-1	82	%	70-135	09.10.19 18.03	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW11**
Lab Sample Id: 636292-011

Matrix: Soil
Date Collected: 09.05.19 09.40

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.10.19 17.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.10.19 17.26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.10.19 17.26	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	09.10.19 17.26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.10.19 17.26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.10.19 17.26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.10.19 17.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	09.10.19 17.26		
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.10.19 17.26		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW12** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636292-012 Date Collected: 09.05.19 09.45 Sample Depth: 0 - 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 09.10.19 14.15 Basis: Wet Weight
 Seq Number: 3101053 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	390	4.95	mg/kg	09.10.19 16.46		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 09.10.19 11.09 Basis: Wet Weight
 Seq Number: 3101056 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.10.19 18.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.10.19 18.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.10.19 18.22	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.10.19 18.22	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.10.19 18.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	09.10.19 18.22	
o-Terphenyl	84-15-1	82	%	70-135	09.10.19 18.22	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW12**
Lab Sample Id: 636292-012

Matrix: Soil
Date Collected: 09.05.19 09.45

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 09.10.19 10.45

Basis: Wet Weight

Seq Number: 3101033

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.10.19 17.47	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.10.19 17.47	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.10.19 17.47	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.10.19 17.47	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.10.19 17.47	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.10.19 17.47	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.10.19 17.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	09.10.19 17.47		
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.10.19 17.47		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW13** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636292-013 Date Collected: 09.05.19 09.50 Sample Depth: 0 - 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 09.10.19 14.15 Basis: Wet Weight
 Seq Number: 3101053 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	50.9	4.95	mg/kg	09.10.19 16.52		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 09.10.19 11.09 Basis: Wet Weight
 Seq Number: 3101056 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.10.19 18.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.10.19 18.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.10.19 18.42	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.10.19 18.42	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.10.19 18.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	09.10.19 18.42	
o-Terphenyl	84-15-1	87	%	70-135	09.10.19 18.42	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW13**
Lab Sample Id: 636292-013

Matrix: Soil
Date Collected: 09.05.19 09.50

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.10.19 18.07	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.10.19 18.07	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.10.19 18.07	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.10.19 18.07	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.10.19 18.07	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.10.19 18.07	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.10.19 18.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	09.10.19 18.07		
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.10.19 18.07		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW14**
Lab Sample Id: 636292-014

Matrix: Soil
Date Collected: 09.05.19 09.55

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3101053

Date Prep: 09.10.19 14.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	274	5.04	mg/kg	09.10.19 17.11		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3101056

Date Prep: 09.10.19 11.09

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.10.19 19.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.10.19 19.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.10.19 19.02	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.10.19 19.02	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.10.19 19.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	09.10.19 19.02	
o-Terphenyl	84-15-1	86	%	70-135	09.10.19 19.02	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW14**
Lab Sample Id: 636292-014

Matrix: Soil
Date Collected: 09.05.19 09.55

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.10.19 18.27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.10.19 18.27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.10.19 18.27	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.10.19 18.27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.10.19 18.27	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.10.19 18.27	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.10.19 18.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	09.10.19 18.27		
1,4-Difluorobenzene	540-36-3	99	%	70-130	09.10.19 18.27		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW15**
Lab Sample Id: 636292-015

Matrix: Soil
Date Collected: 09.06.19 09.50

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3101053

Date Prep: 09.10.19 14.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	27.3	4.96	mg/kg	09.10.19 17.18		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3101056

Date Prep: 09.10.19 11.09

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.10.19 19.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	862	25.0	mg/kg	09.10.19 19.21		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	144	25.0	mg/kg	09.10.19 19.21		1
Total GRO-DRO	PHC628	862	25.0	mg/kg	09.10.19 19.21		1
Total TPH	PHC635	1010	25.0	mg/kg	09.10.19 19.21		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	09.10.19 19.21	
o-Terphenyl	84-15-1	108	%	70-135	09.10.19 19.21	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW15**
Lab Sample Id: 636292-015

Matrix: Soil
Date Collected: 09.06.19 09.50

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.10.19 18.47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.10.19 18.47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.10.19 18.47	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.10.19 18.47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.10.19 18.47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.10.19 18.47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.10.19 18.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	09.10.19 18.47		
4-Bromofluorobenzene	460-00-4	116	%	70-130	09.10.19 18.47		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW16** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636292-016 Date Collected: 09.06.19 09.55 Sample Depth: 0 - 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 09.10.19 14.15 Basis: Wet Weight
 Seq Number: 3101053 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	216	4.98	mg/kg	09.10.19 17.43		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 09.10.19 11.09 Basis: Wet Weight
 Seq Number: 3101056 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.10.19 19.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	237	25.0	mg/kg	09.10.19 19.40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	33.8	25.0	mg/kg	09.10.19 19.40		1
Total GRO-DRO	PHC628	237	25.0	mg/kg	09.10.19 19.40		1
Total TPH	PHC635	271	25.0	mg/kg	09.10.19 19.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	09.10.19 19.40	
o-Terphenyl	84-15-1	98	%	70-135	09.10.19 19.40	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW16**
Lab Sample Id: 636292-016

Matrix: Soil
Date Collected: 09.06.19 09.55

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.10.19 19.07	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.10.19 19.07	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.10.19 19.07	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	09.10.19 19.07	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.10.19 19.07	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.10.19 19.07	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.10.19 19.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	09.10.19 19.07		
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.10.19 19.07		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW17**
Lab Sample Id: 636292-017

Matrix: Soil
Date Collected: 09.06.19 10.00

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3101053

Date Prep: 09.10.19 14.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	294	5.04	mg/kg	09.10.19 17.50		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3101056

Date Prep: 09.10.19 11.09

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	27.6	24.9	mg/kg	09.10.19 19.59		1
Diesel Range Organics (DRO)	C10C28DRO	1220	24.9	mg/kg	09.10.19 19.59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	219	24.9	mg/kg	09.10.19 19.59		1
Total GRO-DRO	PHC628	1250	24.9	mg/kg	09.10.19 19.59		1
Total TPH	PHC635	1470	24.9	mg/kg	09.10.19 19.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	09.10.19 19.59	
o-Terphenyl	84-15-1	116	%	70-135	09.10.19 19.59	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW17**
Lab Sample Id: 636292-017

Matrix: Soil
Date Collected: 09.06.19 10.00

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.10.19 19.27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.10.19 19.27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.10.19 19.27	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.10.19 19.27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.10.19 19.27	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.10.19 19.27	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.10.19 19.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	124	%	70-130	09.10.19 19.27		
1,4-Difluorobenzene	540-36-3	96	%	70-130	09.10.19 19.27		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW18** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636292-018 Date Collected: 09.06.19 10.30 Sample Depth: 0 - 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 09.10.19 14.15 Basis: Wet Weight
 Seq Number: 3101053 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1030	5.02	mg/kg	09.10.19 17.56		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 09.10.19 11.09 Basis: Wet Weight
 Seq Number: 3101056 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	493	24.9	mg/kg	09.10.19 20.19		1
Diesel Range Organics (DRO)	C10C28DRO	2620	24.9	mg/kg	09.10.19 20.19		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	279	24.9	mg/kg	09.10.19 20.19		1
Total GRO-DRO	PHC628	3110	24.9	mg/kg	09.10.19 20.19		1
Total TPH	PHC635	3390	24.9	mg/kg	09.10.19 20.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	09.10.19 20.19	
o-Terphenyl	84-15-1	127	%	70-135	09.10.19 20.19	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW18**
Lab Sample Id: 636292-018

Matrix: Soil
Date Collected: 09.06.19 10.30

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	09.10.19 19.47	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.10.19 19.47	U	1
Ethylbenzene	100-41-4	0.0289	0.00198	mg/kg	09.10.19 19.47		1
m,p-Xylenes	179601-23-1	0.0972	0.00397	mg/kg	09.10.19 19.47		1
o-Xylene	95-47-6	0.0603	0.00198	mg/kg	09.10.19 19.47		1
Total Xylenes	1330-20-7	0.158	0.00198	mg/kg	09.10.19 19.47		1
Total BTEX		0.186	0.00198	mg/kg	09.10.19 19.47		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	165		%	70-130	09.10.19 19.47	**
1,4-Difluorobenzene	540-36-3	107		%	70-130	09.10.19 19.47	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW19**
Lab Sample Id: 636292-019

Matrix: Soil
Date Collected: 09.06.19 10.35

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3101053

Date Prep: 09.10.19 14.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	129	4.98	mg/kg	09.10.19 18.02		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3101056

Date Prep: 09.10.19 11.09

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	565	25.0	mg/kg	09.10.19 20.38		1
Diesel Range Organics (DRO)	C10C28DRO	3700	25.0	mg/kg	09.10.19 20.38		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	464	25.0	mg/kg	09.10.19 20.38		1
Total GRO-DRO	PHC628	4270	25.0	mg/kg	09.10.19 20.38		1
Total TPH	PHC635	4730	25.0	mg/kg	09.10.19 20.38		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	09.10.19 20.38	
o-Terphenyl	84-15-1	124	%	70-135	09.10.19 20.38	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW19**
Lab Sample Id: 636292-019

Matrix: Soil
Date Collected: 09.06.19 10.35

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.10.19 20.07	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.10.19 20.07	U	1
Ethylbenzene	100-41-4	0.0381	0.00201	mg/kg	09.10.19 20.07		1
m,p-Xylenes	179601-23-1	0.0391	0.00402	mg/kg	09.10.19 20.07		1
o-Xylene	95-47-6	0.124	0.00201	mg/kg	09.10.19 20.07		1
Total Xylenes	1330-20-7	0.163	0.00201	mg/kg	09.10.19 20.07		1
Total BTEX		0.201	0.00201	mg/kg	09.10.19 20.07		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	178	%	70-130	09.10.19 20.07	**	
1,4-Difluorobenzene	540-36-3	111	%	70-130	09.10.19 20.07		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW20** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636292-020 Date Collected: 09.06.19 10.40 Sample Depth: 0 - 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 09.10.19 14.15 Basis: Wet Weight
 Seq Number: 3101053 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	886	4.97	mg/kg	09.10.19 18.08		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 09.10.19 11.09 Basis: Wet Weight
 Seq Number: 3101056 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.10.19 20.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	357	25.0	mg/kg	09.10.19 20.57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	43.0	25.0	mg/kg	09.10.19 20.57		1
Total GRO-DRO	PHC628	357	25.0	mg/kg	09.10.19 20.57		1
Total TPH	PHC635	400	25.0	mg/kg	09.10.19 20.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	09.10.19 20.57	
o-Terphenyl	84-15-1	99	%	70-135	09.10.19 20.57	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW20**
Lab Sample Id: 636292-020

Matrix: Soil
Date Collected: 09.06.19 10.40

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101033

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 10.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.10.19 20.27	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.10.19 20.27	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.10.19 20.27	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.10.19 20.27	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.10.19 20.27	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.10.19 20.27	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.10.19 20.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	129	%	70-130	09.10.19 20.27		
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.10.19 20.27		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW21**
Lab Sample Id: 636292-021

Matrix: Soil
Date Collected: 09.06.19 11.20

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3101054

Date Prep: 09.10.19 14.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.0	5.04	mg/kg	09.10.19 15.18		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101058

Date Prep: 09.10.19 11.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.10.19 22.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	1050	24.9	mg/kg	09.10.19 22.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	161	24.9	mg/kg	09.10.19 22.34		1
Total GRO-DRO	PHC628	1050	24.9	mg/kg	09.10.19 22.34		1
Total TPH	PHC635	1210	24.9	mg/kg	09.10.19 22.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	09.10.19 22.34	
o-Terphenyl	84-15-1	110	%	70-135	09.10.19 22.34	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW21**
Lab Sample Id: 636292-021

Matrix: Soil
Date Collected: 09.06.19 11.20

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101038

Date Prep: 09.10.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.10.19 23.45	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.10.19 23.45	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.10.19 23.45	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.10.19 23.45	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.10.19 23.45	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.10.19 23.45	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.10.19 23.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	120	%	70-130	09.10.19 23.45		
1,4-Difluorobenzene	540-36-3	95	%	70-130	09.10.19 23.45		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW22** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636292-022 Date Collected: 09.06.19 11.30 Sample Depth: 0 - 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 09.10.19 14.45 Basis: Wet Weight
 Seq Number: 3101054 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.2	5.00	mg/kg	09.10.19 15.37		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.10.19 11.30 Basis: Wet Weight
 Seq Number: 3101058 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.10.19 23.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.10.19 23.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.10.19 23.31	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.10.19 23.31	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.10.19 23.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	09.10.19 23.31	
o-Terphenyl	84-15-1	95	%	70-135	09.10.19 23.31	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW22**
Lab Sample Id: 636292-022

Matrix: Soil
Date Collected: 09.06.19 11.30

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101038

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 11.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.11.19 00.06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.11.19 00.06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.11.19 00.06	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.11.19 00.06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.11.19 00.06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.11.19 00.06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.11.19 00.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	91	%	70-130	09.11.19 00.06		
4-Bromofluorobenzene	460-00-4	125	%	70-130	09.11.19 00.06		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW23** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636292-023 Date Collected: 09.06.19 11.50 Sample Depth: 0 - 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 09.10.19 14.45 Basis: Wet Weight
 Seq Number: 3101054 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.3	5.01	mg/kg	09.10.19 15.44		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.10.19 11.30 Basis: Wet Weight
 Seq Number: 3101058 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.10.19 23.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.10.19 23.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.10.19 23.51	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.10.19 23.51	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.10.19 23.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	09.10.19 23.51	
o-Terphenyl	84-15-1	94	%	70-135	09.10.19 23.51	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW23**
Lab Sample Id: 636292-023

Matrix: Soil
Date Collected: 09.06.19 11.50

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101038

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 11.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	09.11.19 00.26	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.11.19 00.26	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.11.19 00.26	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	09.11.19 00.26	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	09.11.19 00.26	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	09.11.19 00.26	U	1
Total BTEX		<0.00198	0.00198	mg/kg	09.11.19 00.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	122	%	70-130	09.11.19 00.26		
1,4-Difluorobenzene	540-36-3	95	%	70-130	09.11.19 00.26		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW24**
Lab Sample Id: 636292-024

Matrix: Soil
Date Collected: 09.06.19 12.50

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3101054

Date Prep: 09.10.19 14.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.1	5.01	mg/kg	09.10.19 15.50		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101058

Date Prep: 09.10.19 11.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.11.19 00.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.11.19 00.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.11.19 00.10	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.11.19 00.10	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.11.19 00.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	09.11.19 00.10	
o-Terphenyl	84-15-1	95	%	70-135	09.11.19 00.10	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW24**
Lab Sample Id: 636292-024

Matrix: Soil
Date Collected: 09.06.19 12.50

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101038

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 11.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.11.19 00.46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.11.19 00.46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.11.19 00.46	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.11.19 00.46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.11.19 00.46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.11.19 00.46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.11.19 00.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	09.11.19 00.46		
1,4-Difluorobenzene	540-36-3	97	%	70-130	09.11.19 00.46		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW25**
Lab Sample Id: 636292-025

Matrix: Soil
Date Collected: 09.06.19 13.00

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3101054

Date Prep: 09.10.19 14.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2020	25.3	mg/kg	09.10.19 15.57		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101058

Date Prep: 09.10.19 11.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.11.19 00.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	488	25.0	mg/kg	09.11.19 00.29		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	64.7	25.0	mg/kg	09.11.19 00.29		1
Total GRO-DRO	PHC628	488	25.0	mg/kg	09.11.19 00.29		1
Total TPH	PHC635	553	25.0	mg/kg	09.11.19 00.29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	09.11.19 00.29	
o-Terphenyl	84-15-1	102	%	70-135	09.11.19 00.29	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW25**
Lab Sample Id: 636292-025

Matrix: Soil
Date Collected: 09.06.19 13.00

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101038

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 11.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.11.19 01.06	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.11.19 01.06	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.11.19 01.06	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.11.19 01.06	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.11.19 01.06	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.11.19 01.06	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.11.19 01.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	09.11.19 01.06		
4-Bromofluorobenzene	460-00-4	127	%	70-130	09.11.19 01.06		



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW26** Matrix: Soil Date Received: 09.06.19 16.10
 Lab Sample Id: 636292-026 Date Collected: 09.06.19 13.10 Sample Depth: 0 - 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 09.10.19 14.45 Basis: Wet Weight
 Seq Number: 3101054 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2000	24.9	mg/kg	09.10.19 16.16		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.10.19 11.30 Basis: Wet Weight
 Seq Number: 3101058 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	1220	24.9	mg/kg	09.11.19 00.49		1
Diesel Range Organics (DRO)	C10C28DRO	3060	24.9	mg/kg	09.11.19 00.49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	241	24.9	mg/kg	09.11.19 00.49		1
Total GRO-DRO	PHC628	4280	24.9	mg/kg	09.11.19 00.49		1
Total TPH	PHC635	4520	24.9	mg/kg	09.11.19 00.49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	09.11.19 00.49	
o-Terphenyl	84-15-1	126	%	70-135	09.11.19 00.49	



Certificate of Analytical Results 636292

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW26**
Lab Sample Id: 636292-026

Matrix: Soil
Date Collected: 09.06.19 13.10

Date Received: 09.06.19 16.10
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101038

Prep Method: SW5030B

% Moisture:

Date Prep: 09.10.19 11.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0326	0.00200	mg/kg	09.11.19 01.26		1
Toluene	108-88-3	3.41	0.200	mg/kg	09.11.19 14.52	D	100
Ethylbenzene	100-41-4	0.276	0.00200	mg/kg	09.11.19 01.26		1
m,p-Xylenes	179601-23-1	17.8	0.399	mg/kg	09.11.19 14.52	D	100
o-Xylene	95-47-6	7.52	0.200	mg/kg	09.11.19 14.52	D	100
Total Xylenes	1330-20-7	25.3	0.200	mg/kg	09.11.19 14.52		100
Total BTEX		29.0	0.00200	mg/kg	09.11.19 14.52		100
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	292	%	70-130	09.11.19 01.26	**	
1,4-Difluorobenzene	540-36-3	118	%	70-130	09.11.19 01.26		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 Obs Well#1

Analytical Method: Chloride by EPA 300

Seq Number: 3101053

MB Sample Id: 7685920-1-BLK

Matrix: Solid

LCS Sample Id: 7685920-1-BKS

Prep Method: E300P

Date Prep: 09.10.19

LCSD Sample Id: 7685920-1-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	239	96	239	96	90-110	0	20	mg/kg	09.10.19 14:46	

Analytical Method: Chloride by EPA 300

Seq Number: 3101054

MB Sample Id: 7685921-1-BLK

Matrix: Solid

LCS Sample Id: 7685921-1-BKS

Prep Method: E300P

Date Prep: 09.10.19

LCSD Sample Id: 7685921-1-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	254	102	254	102	90-110	0	20	mg/kg	09.10.19 15:05	

Analytical Method: Chloride by EPA 300

Seq Number: 3101053

Parent Sample Id: 636292-001

Matrix: Soil

MS Sample Id: 636292-001 S

Prep Method: E300P

Date Prep: 09.10.19

MSD Sample Id: 636292-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	430	251	673	97	674	97	90-110	0	20	mg/kg	09.10.19 15:05	

Analytical Method: Chloride by EPA 300

Seq Number: 3101053

Parent Sample Id: 636292-011

Matrix: Soil

MS Sample Id: 636292-011 S

Prep Method: E300P

Date Prep: 09.10.19

MSD Sample Id: 636292-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	20.9	251	274	101	273	100	90-110	0	20	mg/kg	09.10.19 16:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3101054

Parent Sample Id: 636292-021

Matrix: Soil

MS Sample Id: 636292-021 S

Prep Method: E300P

Date Prep: 09.10.19

MSD Sample Id: 636292-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	14.0	252	273	103	274	103	90-110	0	20	mg/kg	09.10.19 15:24	

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

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

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.

Remuda 25 Obs Well#1

Analytical Method: Chloride by EPA 300

Seq Number: 3101054

Parent Sample Id: 636421-001

Matrix: Soil

MS Sample Id: 636421-001 S

Prep Method: E300P

Date Prep: 09.10.19

MSD Sample Id: 636421-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1.88	250	261	104	261	104	90-110	0	20	mg/kg	09.10.19 16:55	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3101056

MB Sample Id: 7685866-1-BLK

Matrix: Solid

LCS Sample Id: 7685866-1-BKS

Prep Method: SW8015P

Date Prep: 09.10.19

LCSD Sample Id: 7685866-1-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	1040	104	1070	107	70-135	3	20	mg/kg	09.10.19 12:30	
Diesel Range Organics (DRO)	<25.0	1000	963	96	991	99	70-135	3	20	mg/kg	09.10.19 12:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		122		126		70-135	%	09.10.19 12:30
o-Terphenyl	123		115		117		70-135	%	09.10.19 12:30

Analytical Method: TPH by SW8015 Mod

Seq Number: 3101058

MB Sample Id: 7685872-1-BLK

Matrix: Solid

LCS Sample Id: 7685872-1-BKS

Prep Method: SW8015P

Date Prep: 09.10.19

LCSD Sample Id: 7685872-1-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	1040	104	1070	107	70-135	3	20	mg/kg	09.10.19 21:55	
Diesel Range Organics (DRO)	<25.0	1000	977	98	1010	101	70-135	3	20	mg/kg	09.10.19 21:55	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		115		116		70-135	%	09.10.19 21:55
o-Terphenyl	96		105		109		70-135	%	09.10.19 21:55

Analytical Method: TPH by SW8015 Mod

Seq Number: 3101056

Parent Sample Id: 636292-001

Matrix: Soil

MS Sample Id: 636292-001 S

Prep Method: SW8015P

Date Prep: 09.10.19

MSD Sample Id: 636292-001 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)	<14.9	996	1110	111	982	98	70-135	12	20	mg/kg	09.10.19 13:28	
Diesel Range Organics (DRO)	<24.9	996	1070	107	940	94	70-135	13	20	mg/kg	09.10.19 13:28	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	130		122		70-135	%	09.10.19 13:28
o-Terphenyl	117		94		70-135	%	09.10.19 13:28

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.

Remuda 25 Obs Well#1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3101058

Parent Sample Id: 636292-021

Matrix: Soil

MS Sample Id: 636292-021 S

Prep Method: SW8015P

Date Prep: 09.10.19

MSD Sample Id: 636292-021 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)	17.5	996	1020	101	1050	103	70-135	3	20	mg/kg	09.10.19 22:53	
Diesel Range Organics (DRO)	1050	996	1260	21	1300	25	70-135	3	20	mg/kg	09.10.19 22:53	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		118		70-135	%	09.10.19 22:53
o-Terphenyl	107		115		70-135	%	09.10.19 22:53

Analytical Method: BTEX by EPA 8021B

Seq Number: 3101033

MB Sample Id: 7685873-1-BLK

Matrix: Solid

LCS Sample Id: 7685873-1-BKS

Prep Method: SW5030B

Date Prep: 09.10.19

LCSD Sample Id: 7685873-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0843	84	0.0910	91	70-130	8	35	mg/kg	09.10.19 09:40	
Toluene	<0.00200	0.100	0.0923	92	0.0972	97	70-130	5	35	mg/kg	09.10.19 09:40	
Ethylbenzene	<0.00200	0.100	0.102	102	0.107	107	70-130	5	35	mg/kg	09.10.19 09:40	
m,p-Xylenes	<0.00400	0.200	0.201	101	0.211	106	70-130	5	35	mg/kg	09.10.19 09:40	
o-Xylene	<0.00200	0.100	0.104	104	0.109	109	70-130	5	35	mg/kg	09.10.19 09:40	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		93		95		70-130	%	09.10.19 09:40
4-Bromofluorobenzene	96		116		115		70-130	%	09.10.19 09:40

Analytical Method: BTEX by EPA 8021B

Seq Number: 3101038

MB Sample Id: 7685874-1-BLK

Matrix: Solid

LCS Sample Id: 7685874-1-BKS

Prep Method: SW5030B

Date Prep: 09.10.19

LCSD Sample Id: 7685874-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0843	84	0.0910	91	70-130	8	35	mg/kg	09.10.19 09:40	
Toluene	<0.00200	0.100	0.0923	92	0.0972	97	70-130	5	35	mg/kg	09.10.19 09:40	
Ethylbenzene	<0.00200	0.100	0.102	102	0.107	107	70-130	5	35	mg/kg	09.10.19 09:40	
m,p-Xylenes	<0.00400	0.200	0.201	101	0.211	106	70-130	5	35	mg/kg	09.10.19 09:40	
o-Xylene	<0.00200	0.100	0.104	104	0.109	109	70-130	5	35	mg/kg	09.10.19 09:40	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		93		95		70-130	%	09.10.19 09:40
4-Bromofluorobenzene	96		116		115		70-130	%	09.10.19 09:40

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

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

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

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



LT Environmental, Inc.

Remuda 25 Obs Well#1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3101033

Parent Sample Id: 636292-001

Matrix: Soil

MS Sample Id: 636292-001 S

Prep Method: SW5030B

Date Prep: 09.10.19

MSD Sample Id: 636292-001 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	0.0394	39	0.0482	48	70-130	20	35	mg/kg	09.10.19 11:48	X
Toluene	<0.00200	0.0998	0.0483	48	0.0534	53	70-130	10	35	mg/kg	09.10.19 11:48	X
Ethylbenzene	<0.00200	0.0998	0.0544	55	0.0569	56	70-130	4	35	mg/kg	09.10.19 11:48	X
m,p-Xylenes	<0.00399	0.200	0.106	53	0.110	54	70-130	4	35	mg/kg	09.10.19 11:48	X
o-Xylene	<0.00200	0.0998	0.0532	53	0.0558	55	70-130	5	35	mg/kg	09.10.19 11:48	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		97		70-130	%	09.10.19 11:48
4-Bromofluorobenzene	124		113		70-130	%	09.10.19 11:48

Analytical Method: BTEX by EPA 8021B

Seq Number: 3101038

Parent Sample Id: 636292-021

Matrix: Soil

MS Sample Id: 636292-021 S

Prep Method: SW5030B

Date Prep: 09.10.19

MSD Sample Id: 636292-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0366	36	0.0262	26	70-130	33	35	mg/kg	09.10.19 22:26	X
Toluene	<0.00202	0.101	0.0285	28	0.0319	32	70-130	11	35	mg/kg	09.10.19 22:26	X
Ethylbenzene	<0.00202	0.101	0.0155	15	0.0209	21	70-130	30	35	mg/kg	09.10.19 22:26	X
m,p-Xylenes	<0.00403	0.202	0.0270	13	0.0339	17	70-130	23	35	mg/kg	09.10.19 22:26	X
o-Xylene	<0.00202	0.101	0.0165	16	0.0223	22	70-130	30	35	mg/kg	09.10.19 22:26	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		78		70-130	%	09.10.19 22:26
4-Bromofluorobenzene	133	**	139	**	70-130	%	09.10.19 22:26

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

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

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: 1830292

Houston, TX (281) 240-4200 Dallas, TX (214) 502-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432) 704-5440 El Paso, TX (915) 886-3443 Lubbock, TX (806) 794-1296
 Moore, NM (575) 382-7550 Phoenix, AZ (480) 355-0800 Atlanta, GA (770) 449-0099 Tampa, FL (813) 620-2009

www.xenco.com

Page 1 of 3

Project Manager:	Dan McR	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:	Carrizosa, NM
Phone:	432.704.5178	Email:	dmcr@xenco.com kmlittle@xenco.com
Project Name:	Reynolds 25 Obs well #1	Turn Around	
Project Number:		Routine	☐
P.O. Number:	ZRP-5309	Rush	4 day
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT				ANALYSIS REQUEST				Work Order Notes	
Temp Blank	Yes	No	Well log	Yes	No				
Temperature (°C):	4.0		Thermometer ID						
Received intact:	Yes	No	Correction Factor:	-0.2					
Cooler Custody Seals:	Yes	No	Total Containers:	36					
Sample Custody Seals:	Yes	No							
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers				
SW01	S	09/01/19	1245	0-5.5'	1	TPH (EPA 8015)			
SW02		09/04/19	1250	0-5.5'	1	BTEX (EPA 8-8021)			
SW03		09/05/19	0845	0-4'	1	Chloride (EPA 300.0)			
SW04			0850	0-4'	1				
SW05			0855	0-5'	1				
SW06			0915	0-2'	1				
SW07			0920	0-2'	1				
SW08			0925	0-2'	1				
SW09			0930	0-4'	1				
SW10			0935	0-2.5'	1				
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 SO2 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									
Notes: 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				



Houston, TX (281) 240-4200 Dallas, TX (214) 962-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432) 704-5440 El Paso, TX (915) 885-3443 Lubbock, TX (806) 794-1296
 Hobbs, NM (877) 392-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 520-2000

Chain of Custody

Work Order No: 1634292

www.xenco.com

Page 2 of 3

Project Manager:	Don Moore	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:	donmoore@xenco.com

Program: UST/PT	☐ PRP	☐ Brownfields	☐ RC	☐ Unperformed
State of Project:				
Reporting Level II	☐ Level III	☐ UST/UST	☐ BRP	☐ Level IV
Deliverables: EOD	☐	ADAPT	☐	Other:

Project Name:	Remuda 25 obs well #1	Turn Around	☐ Routine	☐ Rusty	☐ Due Date:
Project Number:	28P-5309				
P.O. Number:					
Sampler's Name:	Robert McAlister				

09:04 PM

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Num	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

Total 200.7 / 6010 200.8 / 6020: BRCRA 13PPM Texas 11 A 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
 CMLP / SPLP 6010. BRCRA 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 McAlister</i>	<i>Robert McAlister</i>	10/11/2019			



Houston, TX (281) 240-4200 Dallas, TX (214) 802-0300 San Antonio, TX (210) 509-3304
Midland, TX (432-704-4440) El Paso, TX (915) 555-3443 Lubbock, TX (806) 794-1255
Hobbs, NM (575-382-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-520-2000)

Chain of Custody

Work Order No:

4326292

www.xenco.com

Page 3 of 3

Project Manager:	Den Moir	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:	Carsbad, NM
Phone:	432.704.5178	Email:	dmair@xenco.com mcafee@xenv.com

Project Name:	Remuda 25 Obs Well #1	Turn Around	
Project Number:		Routine	☐
P.O. Number:	2RP-5309	Rush:	4 days
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	4.0	Thermometer ID				
Received In tact:	Yes	No	Correction Factor:			
Cooler Custody Seals:	Yes	No	Total Containers:			
Sample Custody Seals:	Yes	No	210			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (%)	BTEX	Chloride	Sample Comments									
SW1	S	07/04/19	1120	0-4'	1	X	X	X	Low Posit									
SW2			1130	0-4.5'		X	X	X										
SW23			1150	0-4'		X	X	X										
SW24			1250	0-5'		X	X	X										
SW25			1300	0-5.5'		X	X	X										
SW26			1310	0-5.5'		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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>Robert McAfee</i>	<i>Den Moir</i>	9/4/19 16:10			



Inter-Office Shipment

Page 1 of 4

IOS Number **47641**

Date/Time: 09/09/19 10:44

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
636292-001	S	SW01	09/04/19 12:45	SW8021B	BTEX by EPA 8021B	09/11/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-001	S	SW01	09/04/19 12:45	E300_CL	Chloride by EPA 300	09/11/19	03/02/20	JKR	CL	
636292-001	S	SW01	09/04/19 12:45	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636292-002	S	SW02	09/04/19 12:50	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636292-002	S	SW02	09/04/19 12:50	E300_CL	Chloride by EPA 300	09/11/19	03/02/20	JKR	CL	
636292-002	S	SW02	09/04/19 12:50	SW8021B	BTEX by EPA 8021B	09/11/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-003	S	SW03	09/05/19 08:45	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/19/19	JKR	GRO-DRO PHCC10C28 PF	
636292-003	S	SW03	09/05/19 08:45	E300_CL	Chloride by EPA 300	09/11/19	03/03/20	JKR	CL	
636292-003	S	SW03	09/05/19 08:45	SW8021B	BTEX by EPA 8021B	09/11/19	09/19/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-004	S	SW04	09/05/19 08:50	E300_CL	Chloride by EPA 300	09/11/19	03/03/20	JKR	CL	
636292-004	S	SW04	09/05/19 08:50	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/19/19	JKR	GRO-DRO PHCC10C28 PF	
636292-004	S	SW04	09/05/19 08:50	SW8021B	BTEX by EPA 8021B	09/11/19	09/19/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-005	S	SW05	09/05/19 08:55	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/19/19	JKR	GRO-DRO PHCC10C28 PF	
636292-005	S	SW05	09/05/19 08:55	SW8021B	BTEX by EPA 8021B	09/11/19	09/19/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-005	S	SW05	09/05/19 08:55	E300_CL	Chloride by EPA 300	09/11/19	03/03/20	JKR	CL	
636292-006	S	SW06	09/05/19 09:15	E300_CL	Chloride by EPA 300	09/11/19	03/03/20	JKR	CL	
636292-006	S	SW06	09/05/19 09:15	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/19/19	JKR	GRO-DRO PHCC10C28 PF	
636292-006	S	SW06	09/05/19 09:15	SW8021B	BTEX by EPA 8021B	09/11/19	09/19/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-007	S	SW07	09/05/19 09:20	E300_CL	Chloride by EPA 300	09/11/19	03/03/20	JKR	CL	
636292-007	S	SW07	09/05/19 09:20	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/19/19	JKR	GRO-DRO PHCC10C28 PF	
636292-007	S	SW07	09/05/19 09:20	SW8021B	BTEX by EPA 8021B	09/11/19	09/19/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-008	S	SW08	09/05/19 09:25	SW8021B	BTEX by EPA 8021B	09/11/19	09/19/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-008	S	SW08	09/05/19 09:25	E300_CL	Chloride by EPA 300	09/11/19	03/03/20	JKR	CL	
636292-008	S	SW08	09/05/19 09:25	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/19/19	JKR	GRO-DRO PHCC10C28 PF	
636292-009	S	SW09	09/05/19 09:30	SW8021B	BTEX by EPA 8021B	09/11/19	09/19/19	JKR	BR4FBZ BZ BZME EBZ X	



Inter-Office Shipment

Page 2 of 4

IOS Number **47641**

Date/Time: 09/09/19 10:44

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
636292-009	S	SW09	09/05/19 09:30	E300_CL	Chloride by EPA 300	09/11/19	03/03/20	JKR	CL	
636292-009	S	SW09	09/05/19 09:30	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/19/19	JKR	GRO-DRO PHCC10C28 PF	
636292-010	S	SW10	09/05/19 09:35	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/19/19	JKR	GRO-DRO PHCC10C28 PF	
636292-010	S	SW10	09/05/19 09:35	SW8021B	BTEX by EPA 8021B	09/11/19	09/19/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-010	S	SW10	09/05/19 09:35	E300_CL	Chloride by EPA 300	09/11/19	03/03/20	JKR	CL	
636292-011	S	SW11	09/05/19 09:40	SW8021B	BTEX by EPA 8021B	09/11/19	09/19/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-011	S	SW11	09/05/19 09:40	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/19/19	JKR	GRO-DRO PHCC10C28 PF	
636292-011	S	SW11	09/05/19 09:40	E300_CL	Chloride by EPA 300	09/11/19	03/03/20	JKR	CL	
636292-012	S	SW12	09/05/19 09:45	SW8021B	BTEX by EPA 8021B	09/11/19	09/19/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-012	S	SW12	09/05/19 09:45	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/19/19	JKR	GRO-DRO PHCC10C28 PF	
636292-012	S	SW12	09/05/19 09:45	E300_CL	Chloride by EPA 300	09/11/19	03/03/20	JKR	CL	
636292-013	S	SW13	09/05/19 09:50	SW8021B	BTEX by EPA 8021B	09/11/19	09/19/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-013	S	SW13	09/05/19 09:50	E300_CL	Chloride by EPA 300	09/11/19	03/03/20	JKR	CL	
636292-013	S	SW13	09/05/19 09:50	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/19/19	JKR	GRO-DRO PHCC10C28 PF	
636292-014	S	SW14	09/05/19 09:55	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/19/19	JKR	GRO-DRO PHCC10C28 PF	
636292-014	S	SW14	09/05/19 09:55	SW8021B	BTEX by EPA 8021B	09/11/19	09/19/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-014	S	SW14	09/05/19 09:55	E300_CL	Chloride by EPA 300	09/11/19	03/03/20	JKR	CL	
636292-015	S	SW15	09/06/19 09:50	SW8021B	BTEX by EPA 8021B	09/11/19	09/20/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-015	S	SW15	09/06/19 09:50	E300_CL	Chloride by EPA 300	09/11/19	03/04/20	JKR	CL	
636292-015	S	SW15	09/06/19 09:50	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/20/19	JKR	GRO-DRO PHCC10C28 PF	
636292-016	S	SW16	09/06/19 09:55	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/20/19	JKR	GRO-DRO PHCC10C28 PF	
636292-016	S	SW16	09/06/19 09:55	SW8021B	BTEX by EPA 8021B	09/11/19	09/20/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-016	S	SW16	09/06/19 09:55	E300_CL	Chloride by EPA 300	09/11/19	03/04/20	JKR	CL	
636292-017	S	SW17	09/06/19 10:00	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/20/19	JKR	GRO-DRO PHCC10C28 PF	
636292-017	S	SW17	09/06/19 10:00	SW8021B	BTEX by EPA 8021B	09/11/19	09/20/19	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:



Inter-Office Shipment

Page 3 of 4

IOS Number **47641**

Date/Time: 09/09/19 10:44

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
636292-017	S	SW17	09/06/19 10:00	E300_CL	Chloride by EPA 300	09/11/19	03/04/20	JKR	CL	
636292-018	S	SW18	09/06/19 10:30	SW8021B	BTEX by EPA 8021B	09/11/19	09/20/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-018	S	SW18	09/06/19 10:30	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/20/19	JKR	GRO-DRO PHCC10C28 PF	
636292-018	S	SW18	09/06/19 10:30	E300_CL	Chloride by EPA 300	09/11/19	03/04/20	JKR	CL	
636292-019	S	SW19	09/06/19 10:35	SW8021B	BTEX by EPA 8021B	09/11/19	09/20/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-019	S	SW19	09/06/19 10:35	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/20/19	JKR	GRO-DRO PHCC10C28 PF	
636292-019	S	SW19	09/06/19 10:35	E300_CL	Chloride by EPA 300	09/11/19	03/04/20	JKR	CL	
636292-020	S	SW20	09/06/19 10:40	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/20/19	JKR	GRO-DRO PHCC10C28 PF	
636292-020	S	SW20	09/06/19 10:40	SW8021B	BTEX by EPA 8021B	09/11/19	09/20/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-020	S	SW20	09/06/19 10:40	E300_CL	Chloride by EPA 300	09/11/19	03/04/20	JKR	CL	
636292-021	S	SW21	09/06/19 11:20	SW8021B	BTEX by EPA 8021B	09/11/19	09/20/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-021	S	SW21	09/06/19 11:20	E300_CL	Chloride by EPA 300	09/11/19	03/04/20	JKR	CL	
636292-021	S	SW21	09/06/19 11:20	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/20/19	JKR	GRO-DRO PHCC10C28 PF	
636292-022	S	SW22	09/06/19 11:30	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/20/19	JKR	GRO-DRO PHCC10C28 PF	
636292-022	S	SW22	09/06/19 11:30	SW8021B	BTEX by EPA 8021B	09/11/19	09/20/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-022	S	SW22	09/06/19 11:30	E300_CL	Chloride by EPA 300	09/11/19	03/04/20	JKR	CL	
636292-023	S	SW23	09/06/19 11:50	SW8021B	BTEX by EPA 8021B	09/11/19	09/20/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-023	S	SW23	09/06/19 11:50	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/20/19	JKR	GRO-DRO PHCC10C28 PF	
636292-023	S	SW23	09/06/19 11:50	E300_CL	Chloride by EPA 300	09/11/19	03/04/20	JKR	CL	
636292-024	S	SW24	09/06/19 12:50	SW8021B	BTEX by EPA 8021B	09/11/19	09/20/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-024	S	SW24	09/06/19 12:50	E300_CL	Chloride by EPA 300	09/11/19	03/04/20	JKR	CL	
636292-024	S	SW24	09/06/19 12:50	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/20/19	JKR	GRO-DRO PHCC10C28 PF	
636292-025	S	SW25	09/06/19 13:00	SW8021B	BTEX by EPA 8021B	09/11/19	09/20/19	JKR	BR4FBZ BZ BZME EBZ X	
636292-025	S	SW25	09/06/19 13:00	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/20/19	JKR	GRO-DRO PHCC10C28 PF	
636292-025	S	SW25	09/06/19 13:00	E300_CL	Chloride by EPA 300	09/11/19	03/04/20	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By:

Received By:



Inter-Office Shipment

Page 4 of 4

IOS Number **47641**

Date/Time: 09/09/19 10:44

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
636292-026	S	SW26	09/06/19 13:10	E300_CL	Chloride by EPA 300	09/11/19	03/04/20	JKR	CL	
636292-026	S	SW26	09/06/19 13:10	SW8015MOD_NM	TPH by SW8015 Mod	09/11/19	09/20/19	JKR	GRO-DRO PHCC10C28 PF	
636292-026	S	SW26	09/06/19 13:10	SW8021B	BTEX by EPA 8021B	09/11/19	09/20/19	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Date Relinquished:

Elizabeth McClellan

09/09/2019

Date Received:

Cooler Temperature:

Brianna Teel

09/10/2019 10:51

0.6



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 47641

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 09/09/2019 10:44 AM

Received By: Brianna Teel

Date Received: 09/10/2019 10:51 AM

Sample Receipt Checklist

Comments

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: 09/10/2019



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 09/06/2019 04:10:00 PM

Work Order #: 636292

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	4.6	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	No	
#5 Custody Seals intact on sample bottles?	No	
#6 *Custody Seals Signed and dated?	N/A	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	Yes	Subbed to Xenco Midland.
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 09/09/2019

Checklist reviewed by:

Jessica Kramer

Date: 09/09/2019

Analytical Report 636900

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda 25 Obs Well#1

18-SEP-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

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

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



18-SEP-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **636900**

Remuda 25 Obs Well#1

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 636900. 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. 636900 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW31	S	09-12-19 12:50	0 - 5 ft	636900-001
SW32	S	09-12-19 12:55	0 - 4 ft	636900-002
SW33	S	09-12-19 13:00	0 - 6 ft	636900-003
SW34	S	09-12-19 13:05	0 - 4 ft	636900-004
SW29	S	09-11-19 11:10	0 - 5 ft	636900-005
SW30	S	09-11-19 12:00	0 - 4 ft	636900-006
SW27	S	09-11-19 10:50	0 - 4 ft	636900-007
SW28	S	09-11-19 11:00	0 - 4.5 ft	636900-008
FS49A	S	09-11-19 12:30	7.5 ft	636900-009
FS51A	S	09-11-19 12:50	7.5 ft	636900-010
FS72A	S	09-12-19 15:25	6 ft	636900-011
FS79	S	09-12-19 12:35	4 ft	636900-012
FS80	S	09-12-19 12:30	4 ft	636900-013
FS81	S	09-12-19 09:30	4 ft	636900-014
FS02A	S	09-12-19 09:35	4 ft	636900-015
FS04A	S	09-12-19 09:20	4 ft	636900-016
FS03A	S	09-12-19 09:25	4 ft	636900-017
FS05A	S	09-12-19 12:35	4 ft	636900-018
FS48A	S	09-12-19 15:20	7.5 ft	636900-019
FS83	S	09-12-19 09:15	4 ft	636900-020
FS50A	S	09-11-19 12:40	7.5 ft	636900-021
FS66A	S	09-11-19 13:30	6 ft	636900-022
FS78	S	09-11-19 12:10	4 ft	636900-023
FS65A	S	09-11-19 13:25	6 ft	636900-024
FS62A	S	09-11-19 13:20	5 ft	636900-025
FS57A	S	09-11-19 13:15	5 ft	636900-026
FS77	S	09-11-19 12:05	4 ft	636900-027

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: Remuda 25 Obs Well#1**

Project ID:
Work Order Number(s): 636900

Report Date: 18-SEP-19
Date Received: 09/13/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3101525 BTEX by EPA 8021B

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

Batch: LBA-3101533 BTEX by EPA 8021B

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

Batch: LBA-3101548 TPH by SW8015 Mod

Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 636900-001.

Batch: LBA-3101625 Chloride by EPA 300

Lab Sample ID 636900-015 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 636900-005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020, -021, -022.

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

Batch: LBA-3101626 Chloride by EPA 300

Lab Sample ID 636927-009 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 636900-023, -024, -025, -026, -027.

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



Certificate of Analysis Summary 636900

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well#1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Sep-13-19 04:55 pm

Report Date: 18-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636900-001	636900-002	636900-003	636900-004	636900-005	636900-006
	<i>Field Id:</i>	SW31	SW32	SW33	SW34	SW29	SW30
	<i>Depth:</i>	0-5 ft	0-4 ft	0-6 ft	0-4 ft	0-5 ft	0-4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-12-19 12:50	Sep-12-19 12:55	Sep-12-19 13:00	Sep-12-19 13:05	Sep-11-19 11:10	Sep-11-19 12:00
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-14-19 15:09	Sep-13-19 18:09	Sep-13-19 18:09	Sep-13-19 18:09	Sep-13-19 18:09	Sep-13-19 18:09
	<i>Analyzed:</i>	Sep-15-19 02:37	Sep-14-19 00:49	Sep-14-19 02:08	Sep-14-19 02:27	Sep-14-19 02:47	Sep-14-19 03:07
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.0100 0.0100	<0.000998 0.000998	<0.000998 0.000998	<0.000992 0.000992	<0.000996 0.000996	<0.000986 0.000986
Toluene		0.0460 0.0100	<0.000998 0.000998	<0.000998 0.000998	<0.000992 0.000992	<0.000996 0.000996	<0.000986 0.000986
Ethylbenzene		0.448 0.0100	<0.000998 0.000998	<0.000998 0.000998	<0.000992 0.000992	<0.000996 0.000996	<0.000986 0.000986
m,p-Xylenes		2.95 0.0200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	0.00570 0.00197
o-Xylene		2.30 0.0100	<0.000998 0.000998	<0.000998 0.000998	<0.000992 0.000992	<0.000996 0.000996	0.00264 0.000986
Total Xylenes		5.25 0.0100	<0.000998 0.000998	<0.000998 0.000998	<0.000992 0.000992	<0.000996 0.000996	0.00834 0.000986
Total BTEX		5.74 0.0100	<0.000998 0.000998	<0.000998 0.000998	<0.000992 0.000992	<0.000996 0.000996	0.00834 0.000986
Chloride by EPA 300	<i>Extracted:</i>	Sep-13-19 17:10	Sep-13-19 17:10	Sep-13-19 17:10	Sep-13-19 17:10	Sep-16-19 08:00	Sep-16-19 08:00
	<i>Analyzed:</i>	Sep-13-19 22:07	Sep-13-19 22:13	Sep-13-19 22:20	Sep-13-19 22:26	Sep-16-19 11:46	Sep-16-19 12:05
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1790 200	145 9.96	95.7 9.98	2130 199	<10.0 10.0	<9.84 9.84
TPH by SW8015 Mod	<i>Extracted:</i>	*** ** *	*** ** *	*** ** *	*** ** *	Sep-16-19 10:00	Sep-16-19 10:00
	<i>Analyzed:</i>	Sep-13-19 23:58	Sep-14-19 00:18	Sep-14-19 00:39	Sep-14-19 00:59	Sep-16-19 17:16	Sep-16-19 18:19
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		195 24.9	<25.0 25.0	<24.9 24.9	<24.9 24.9	<25.1 25.1	<25.1 25.1
Diesel Range Organics (DRO)		1850 24.9	<25.0 25.0	<24.9 24.9	<24.9 24.9	<25.1 25.1	<25.1 25.1
Motor Oil Range Hydrocarbons (MRO)		<24.9 24.9	<25.0 25.0	<24.9 24.9	<24.9 24.9	<25.1 25.1	<25.1 25.1
Total GRO-DRO		2050 24.9	<25.0 25.0	<24.9 24.9	<24.9 24.9	<25.1 25.1	<25.1 25.1
Total TPH		2050 24.9	<25.0 25.0	<24.9 24.9	<24.9 24.9	<25.1 25.1	<25.1 25.1

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

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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 636900

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well#1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Sep-13-19 04:55 pm

Report Date: 18-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636900-007	636900-008	636900-009	636900-010	636900-011	636900-012
	<i>Field Id:</i>	SW27	SW28	FS49A	FS51A	FS72A	FS79
	<i>Depth:</i>	0-4 ft	0-4.5 ft	7.5- ft	7.5- ft	6- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-11-19 10:50	Sep-11-19 11:00	Sep-11-19 12:30	Sep-11-19 12:50	Sep-12-19 15:25	Sep-12-19 12:35
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-13-19 18:09	Sep-13-19 18:09	Sep-13-19 18:09	Sep-13-19 18:09	Sep-13-19 18:09	Sep-14-19 15:09
	<i>Analyzed:</i>	Sep-14-19 12:24	Sep-14-19 12:44	Sep-14-19 13:04	Sep-14-19 13:23	Sep-14-19 13:43	Sep-14-19 20:44
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000984 0.000984	<0.000990 0.000990	<0.000982 0.000982	<0.000996 0.000996	<0.000986 0.000986	<0.000996 0.000996
Toluene		<0.000984 0.000984	<0.000990 0.000990	0.0157 0.000982	<0.000996 0.000996	<0.000986 0.000986	<0.000996 0.000996
Ethylbenzene		<0.000984 0.000984	<0.000990 0.000990	0.0334 0.000982	<0.000996 0.000996	<0.000986 0.000986	<0.000996 0.000996
m,p-Xylenes		<0.00197 0.00197	<0.00198 0.00198	0.242 0.00196	0.00232 0.00199	<0.00197 0.00197	<0.00199 0.00199
o-Xylene		<0.000984 0.000984	<0.000990 0.000990	0.166 0.000982	0.00157 0.000996	<0.000986 0.000986	<0.000996 0.000996
Total Xylenes		<0.000984 0.000984	<0.000990 0.000990	0.408 0.000982	0.00389 0.000996	<0.000986 0.000986	<0.000996 0.000996
Total BTEX		<0.000984 0.000984	<0.000990 0.000990	0.457 0.000982	0.00389 0.000996	<0.000986 0.000986	<0.000996 0.000996
Chloride by EPA 300	<i>Extracted:</i>	Sep-16-19 08:00	Sep-16-19 08:00	Sep-16-19 08:00	Sep-16-19 08:00	Sep-16-19 08:00	Sep-16-19 08:00
	<i>Analyzed:</i>	Sep-16-19 12:12	Sep-16-19 12:18	Sep-16-19 12:25	Sep-16-19 12:44	Sep-16-19 12:50	Sep-16-19 12:57
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		308 49.6	545 49.6	9600 198	741 19.7	2170 49.7	272 9.98
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-16-19 10:00	Sep-16-19 10:00	Sep-16-19 10:00	Sep-16-19 10:00	Sep-16-19 10:00	Sep-16-19 10:00
	<i>Analyzed:</i>	Sep-16-19 18:39	Sep-16-19 19:00	Sep-16-19 19:20	Sep-16-19 19:41	Sep-16-19 20:01	Sep-16-19 20:22
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<24.9 24.9	<24.9 24.9	275 25.0	<24.9 24.9	<25.0 25.0	<25.0 25.0
Diesel Range Organics (DRO)		<24.9 24.9	124 24.9	1270 25.0	<24.9 24.9	<25.0 25.0	<25.0 25.0
Motor Oil Range Hydrocarbons (MRO)		<24.9 24.9	<24.9 24.9	<25.0 25.0	<24.9 24.9	<25.0 25.0	<25.0 25.0
Total GRO-DRO		<24.9 24.9	124 24.9	1550 25.0	<24.9 24.9	<25.0 25.0	<25.0 25.0
Total TPH		<24.9 24.9	124 24.9	1550 25.0	<24.9 24.9	<25.0 25.0	<25.0 25.0

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

Version: 1.0%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 636900

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well#1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Sep-13-19 04:55 pm

Report Date: 18-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636900-013	636900-014	636900-015	636900-016	636900-017	636900-018
	<i>Field Id:</i>	FS80	FS81	FS02A	FS04A	FS03A	FS05A
	<i>Depth:</i>	4- ft	4- ft	4- ft	4- ft	4- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-12-19 12:30	Sep-12-19 09:30	Sep-12-19 09:35	Sep-12-19 09:20	Sep-12-19 09:25	Sep-12-19 12:35
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-14-19 15:09	Sep-14-19 15:09	Sep-14-19 15:09	Sep-14-19 15:09	Sep-14-19 15:09	Sep-14-19 15:09
	<i>Analyzed:</i>	Sep-14-19 21:03	Sep-14-19 21:23	Sep-14-19 21:43	Sep-14-19 22:02	Sep-14-19 22:22	Sep-14-19 22:42
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000998 0.000998	<0.000998 0.000998	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100
Toluene		<0.000998 0.000998	<0.000998 0.000998	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100
Ethylbenzene		<0.000998 0.000998	<0.000998 0.000998	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
o-Xylene		<0.000998 0.000998	<0.000998 0.000998	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100
Total Xylenes		<0.000998 0.000998	<0.000998 0.000998	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100
Total BTEX		<0.000998 0.000998	<0.000998 0.000998	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100
Chloride by EPA 300	<i>Extracted:</i>	Sep-16-19 08:00	Sep-16-19 08:00	Sep-16-19 08:00	Sep-16-19 08:00	Sep-16-19 08:00	Sep-16-19 08:00
	<i>Analyzed:</i>	Sep-16-19 13:03	Sep-16-19 13:10	Sep-16-19 13:16	Sep-16-19 13:36	Sep-16-19 13:42	Sep-16-19 14:02
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		480 19.8	276 100	756 198	197 19.8	3340 98.4	494 19.8
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-16-19 10:00	Sep-16-19 10:00	Sep-16-19 10:00	Sep-16-19 10:00	Sep-16-19 10:00	Sep-16-19 10:00
	<i>Analyzed:</i>	Sep-16-19 20:42	Sep-16-19 21:03	Sep-16-19 21:44	Sep-16-19 22:04	Sep-16-19 22:24	Sep-16-19 22:45
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<24.9 24.9	<25.0 25.0	<25.0 25.0	<24.9 24.9	<24.9 24.9	<25.1 25.1
Diesel Range Organics (DRO)		<24.9 24.9	<25.0 25.0	<25.0 25.0	<24.9 24.9	<24.9 24.9	<25.1 25.1
Motor Oil Range Hydrocarbons (MRO)		<24.9 24.9	<25.0 25.0	<25.0 25.0	<24.9 24.9	<24.9 24.9	<25.1 25.1
Total GRO-DRO		<24.9 24.9	<25.0 25.0	<25.0 25.0	<24.9 24.9	<24.9 24.9	<25.1 25.1
Total TPH		<24.9 24.9	<25.0 25.0	<25.0 25.0	<24.9 24.9	<24.9 24.9	<25.1 25.1

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

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

Version: 1.0%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 636900

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well#1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Sep-13-19 04:55 pm

Report Date: 18-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636900-019	636900-020	636900-021	636900-022	636900-023	636900-024
	<i>Field Id:</i>	FS48A	FS83	FS50A	FS66A	FS78	FS65A
	<i>Depth:</i>	7.5- ft	4- ft	7.5- ft	6- ft	4- ft	6- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-12-19 15:20	Sep-12-19 09:15	Sep-11-19 12:40	Sep-11-19 13:30	Sep-11-19 12:10	Sep-11-19 13:25
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-14-19 15:09	Sep-14-19 15:09	Sep-14-19 15:09	Sep-14-19 15:09	Sep-14-19 15:09	Sep-14-19 15:09
	<i>Analyzed:</i>	Sep-14-19 23:41	Sep-15-19 00:00	Sep-15-19 02:18	Sep-15-19 00:20	Sep-15-19 00:40	Sep-15-19 00:59
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000994 0.000994	<0.00100 0.00100	<0.00201 0.00201	<0.000996 0.000996	<0.00101 0.00101	<0.000992 0.000992
Toluene		<0.000994 0.000994	<0.00100 0.00100	0.0440 0.00201	<0.000996 0.000996	<0.00101 0.00101	<0.000992 0.000992
Ethylbenzene		<0.000994 0.000994	<0.00100 0.00100	0.126 0.00201	<0.000996 0.000996	<0.00101 0.00101	<0.000992 0.000992
m,p-Xylenes		<0.00199 0.00199	<0.00200 0.00200	1.17 0.00402	<0.00199 0.00199	0.00843 0.00201	<0.00198 0.00198
o-Xylene		<0.000994 0.000994	<0.00100 0.00100	0.377 0.00201	<0.000996 0.000996	0.00297 0.00101	<0.000992 0.000992
Total Xylenes		<0.000994 0.000994	<0.00100 0.00100	1.55 0.00201	<0.000996 0.000996	0.0114 0.00101	<0.000992 0.000992
Total BTEX		<0.000994 0.000994	<0.00100 0.00100	1.72 0.00201	<0.000996 0.000996	0.0114 0.00101	<0.000992 0.000992
Chloride by EPA 300	<i>Extracted:</i>	Sep-16-19 08:00	Sep-16-19 08:00	Sep-16-19 08:00	Sep-16-19 08:00	Sep-16-19 08:09	Sep-16-19 08:09
	<i>Analyzed:</i>	Sep-16-19 14:08	Sep-16-19 14:14	Sep-16-19 14:21	Sep-16-19 14:27	Sep-16-19 15:06	Sep-16-19 15:25
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5890 99.8	288 19.9	3020 50.2	670 19.7	37.0 9.98	1860 49.9
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-16-19 10:00	Sep-16-19 10:00	Sep-16-19 10:00	Sep-16-19 10:00	Sep-16-19 10:00	Sep-16-19 10:00
	<i>Analyzed:</i>	Sep-16-19 23:05	Sep-16-19 23:26	Sep-16-19 23:46	Sep-17-19 00:07	Sep-17-19 00:27	Sep-17-19 00:48
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<24.9 24.9	<25.0 25.0	165 25.0	<25.1 25.1	<25.1 25.1	<24.9 24.9
Diesel Range Organics (DRO)		<24.9 24.9	<25.0 25.0	662 25.0	<25.1 25.1	<25.1 25.1	<24.9 24.9
Motor Oil Range Hydrocarbons (MRO)		<24.9 24.9	<25.0 25.0	<25.0 25.0	<25.1 25.1	<25.1 25.1	<24.9 24.9
Total GRO-DRO		<24.9 24.9	<25.0 25.0	827 25.0	<25.1 25.1	<25.1 25.1	<24.9 24.9
Total TPH		<24.9 24.9	<25.0 25.0	827 25.0	<25.1 25.1	<25.1 25.1	<24.9 24.9

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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 636900

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well#1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Sep-13-19 04:55 pm

Report Date: 18-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636900-025	636900-026	636900-027			
	<i>Field Id:</i>	FS62A	FS57A	FS77			
	<i>Depth:</i>	5- ft	5- ft	4- ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Sep-11-19 13:20	Sep-11-19 13:15	Sep-11-19 12:05			
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-14-19 15:09	Sep-14-19 15:09	Sep-14-19 15:09			
	<i>Analyzed:</i>	Sep-15-19 01:19	Sep-15-19 01:39	Sep-15-19 01:58			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.000996 0.000996	<0.00101 0.00101	<0.00100 0.00100			
Toluene		0.00171 0.000996	<0.00101 0.00101	<0.00100 0.00100			
Ethylbenzene		0.00214 0.000996	<0.00101 0.00101	<0.00100 0.00100			
m,p-Xylenes		0.0115 0.00199	0.00538 0.00201	<0.00201 0.00201			
o-Xylene		0.0142 0.000996	0.00205 0.00101	<0.00100 0.00100			
Total Xylenes		0.0257 0.000996	0.00743 0.00101	<0.00100 0.00100			
Total BTEX		0.0296 0.000996	0.00743 0.00101	<0.00100 0.00100			
Chloride by EPA 300	<i>Extracted:</i>	Sep-16-19 08:09	Sep-16-19 08:09	Sep-16-19 08:09			
	<i>Analyzed:</i>	Sep-16-19 15:41	Sep-16-19 15:47	Sep-16-19 15:54			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		1560 50.3	1070 49.8	54.4 9.94			
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-16-19 11:00	Sep-16-19 11:00	Sep-16-19 11:00			
	<i>Analyzed:</i>	Sep-17-19 02:29	Sep-17-19 03:30	Sep-17-19 03:50			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<25.0 25.0	<25.1 25.1	<25.1 25.1			
Diesel Range Organics (DRO)		79.9 25.0	<25.1 25.1	<25.1 25.1			
Motor Oil Range Hydrocarbons (MRO)		<25.0 25.0	<25.1 25.1	<25.1 25.1			
Total GRO-DRO		79.9 25.0	<25.1 25.1	<25.1 25.1			
Total TPH		79.9 25.0	<25.1 25.1	<25.1 25.1			

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

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

Version: 1.0%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW31**
Lab Sample Id: 636900-001

Matrix: Soil
Date Collected: 09.12.19 12.50

Date Received: 09.13.19 16.55
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101493

Date Prep: 09.13.19 17.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1790	200	mg/kg	09.13.19 22.07		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101548

Date Prep: 09.13.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	195	24.9	mg/kg	09.13.19 23.58		1
Diesel Range Organics (DRO)	C10C28DRO	1850	24.9	mg/kg	09.13.19 23.58		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.13.19 23.58	U	1
Total GRO-DRO	PHC628	2050	24.9	mg/kg	09.13.19 23.58		1
Total TPH	PHC635	2050	24.9	mg/kg	09.13.19 23.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	135	%	70-135	09.13.19 23.58	
o-Terphenyl	84-15-1	140	%	70-135	09.13.19 23.58	**



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW31**
Lab Sample Id: 636900-001

Matrix: Soil
Date Collected: 09.12.19 12.50

Date Received: 09.13.19 16.55
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.14.19 15.09

Basis: Wet Weight

Seq Number: 3101533

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0100	0.0100	mg/kg	09.15.19 02.37	U	1
Toluene	108-88-3	0.0460	0.0100	mg/kg	09.15.19 02.37		1
Ethylbenzene	100-41-4	0.448	0.0100	mg/kg	09.15.19 02.37		1
m,p-Xylenes	179601-23-1	2.95	0.0200	mg/kg	09.15.19 02.37		1
o-Xylene	95-47-6	2.30	0.0100	mg/kg	09.15.19 02.37		1
Total Xylenes	1330-20-7	5.25	0.0100	mg/kg	09.15.19 02.37		1
Total BTEX		5.74	0.0100	mg/kg	09.15.19 02.37		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	09.15.19 02.37		
1,4-Difluorobenzene	540-36-3	128	%	70-130	09.15.19 02.37		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW32**
Lab Sample Id: 636900-002

Matrix: Soil
Date Collected: 09.12.19 12.55

Date Received: 09.13.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101493

Date Prep: 09.13.19 17.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	145	9.96	mg/kg	09.13.19 22.13		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101548

Date Prep: 09.13.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.14.19 00.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.14.19 00.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.14.19 00.18	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.14.19 00.18	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.14.19 00.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	09.14.19 00.18	
o-Terphenyl	84-15-1	100	%	70-135	09.14.19 00.18	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW32**
Lab Sample Id: 636900-002

Matrix: Soil
Date Collected: 09.12.19 12.55

Date Received: 09.13.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101525

Prep Method: SW5030B

% Moisture:

Date Prep: 09.13.19 18.09

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	09.14.19 00.49	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	09.14.19 00.49	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	09.14.19 00.49	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	09.14.19 00.49	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	09.14.19 00.49	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	09.14.19 00.49	U	1
Total BTEX		<0.000998	0.000998	mg/kg	09.14.19 00.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	09.14.19 00.49		
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.14.19 00.49		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW33** Matrix: Soil Date Received: 09.13.19 16.55
 Lab Sample Id: 636900-003 Date Collected: 09.12.19 13.00 Sample Depth: 0 - 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.13.19 17.10 Basis: Wet Weight
 Seq Number: 3101493

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	95.7	9.98	mg/kg	09.13.19 22.20		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.13.19 16.00 Basis: Wet Weight
 Seq Number: 3101548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.14.19 00.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.14.19 00.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.14.19 00.39	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.14.19 00.39	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.14.19 00.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	09.14.19 00.39	
o-Terphenyl	84-15-1	99	%	70-135	09.14.19 00.39	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW33**
Lab Sample Id: 636900-003

Matrix: Soil
Date Collected: 09.12.19 13.00

Date Received: 09.13.19 16.55
Sample Depth: 0 - 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.13.19 18.09

Basis: Wet Weight

Seq Number: 3101525

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	09.14.19 02.08	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	09.14.19 02.08	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	09.14.19 02.08	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	09.14.19 02.08	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	09.14.19 02.08	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	09.14.19 02.08	U	1
Total BTEX		<0.000998	0.000998	mg/kg	09.14.19 02.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.14.19 02.08		
4-Bromofluorobenzene	460-00-4	102	%	70-130	09.14.19 02.08		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW34**
Lab Sample Id: 636900-004

Matrix: Soil
Date Collected: 09.12.19 13.05

Date Received: 09.13.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101493

Date Prep: 09.13.19 17.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2130	199	mg/kg	09.13.19 22.26		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101548

Date Prep: 09.13.19 16.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.14.19 00.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.14.19 00.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.14.19 00.59	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.14.19 00.59	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.14.19 00.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	09.14.19 00.59	
o-Terphenyl	84-15-1	97	%	70-135	09.14.19 00.59	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW34**
Lab Sample Id: 636900-004

Matrix: Soil
Date Collected: 09.12.19 13.05

Date Received: 09.13.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101525

Date Prep: 09.13.19 18.09

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000992	0.000992	mg/kg	09.14.19 02.27	U	1
Toluene	108-88-3	<0.000992	0.000992	mg/kg	09.14.19 02.27	U	1
Ethylbenzene	100-41-4	<0.000992	0.000992	mg/kg	09.14.19 02.27	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	09.14.19 02.27	U	1
o-Xylene	95-47-6	<0.000992	0.000992	mg/kg	09.14.19 02.27	U	1
Total Xylenes	1330-20-7	<0.000992	0.000992	mg/kg	09.14.19 02.27	U	1
Total BTEX		<0.000992	0.000992	mg/kg	09.14.19 02.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	09.14.19 02.27		
1,4-Difluorobenzene	540-36-3	104	%	70-130	09.14.19 02.27		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW29**
Lab Sample Id: 636900-005

Matrix: Soil
Date Collected: 09.11.19 11.10

Date Received: 09.13.19 16.55
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101625

Date Prep: 09.16.19 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	09.16.19 11.46	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101624

Date Prep: 09.16.19 10.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.16.19 17.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.16.19 17.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.16.19 17.16	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	09.16.19 17.16	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.16.19 17.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	09.16.19 17.16	
o-Terphenyl	84-15-1	102	%	70-135	09.16.19 17.16	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW29**
Lab Sample Id: 636900-005

Matrix: Soil
Date Collected: 09.11.19 11.10

Date Received: 09.13.19 16.55
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101525

Date Prep: 09.13.19 18.09

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	09.14.19 02.47	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	09.14.19 02.47	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	09.14.19 02.47	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	09.14.19 02.47	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	09.14.19 02.47	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	09.14.19 02.47	U	1
Total BTEX		<0.000996	0.000996	mg/kg	09.14.19 02.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	09.14.19 02.47		
1,4-Difluorobenzene	540-36-3	106	%	70-130	09.14.19 02.47		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW30**
Lab Sample Id: 636900-006

Matrix: Soil
Date Collected: 09.11.19 12.00

Date Received: 09.13.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101625

Date Prep: 09.16.19 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.84	9.84	mg/kg	09.16.19 12.05	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101624

Date Prep: 09.16.19 10.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.16.19 18.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.16.19 18.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.16.19 18.19	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	09.16.19 18.19	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.16.19 18.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	09.16.19 18.19	
o-Terphenyl	84-15-1	102	%	70-135	09.16.19 18.19	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW30**
Lab Sample Id: 636900-006

Matrix: Soil
Date Collected: 09.11.19 12.00

Date Received: 09.13.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101525

Date Prep: 09.13.19 18.09

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000986	0.000986	mg/kg	09.14.19 03.07	U	1
Toluene	108-88-3	<0.000986	0.000986	mg/kg	09.14.19 03.07	U	1
Ethylbenzene	100-41-4	<0.000986	0.000986	mg/kg	09.14.19 03.07	U	1
m,p-Xylenes	179601-23-1	0.00570	0.00197	mg/kg	09.14.19 03.07		1
o-Xylene	95-47-6	0.00264	0.000986	mg/kg	09.14.19 03.07		1
Total Xylenes	1330-20-7	0.00834	0.000986	mg/kg	09.14.19 03.07		1
Total BTEX		0.00834	0.000986	mg/kg	09.14.19 03.07		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	09.14.19 03.07		
1,4-Difluorobenzene	540-36-3	107	%	70-130	09.14.19 03.07		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW27**
Lab Sample Id: 636900-007

Matrix: Soil
Date Collected: 09.11.19 10.50

Date Received: 09.13.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101625

Date Prep: 09.16.19 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	308	49.6	mg/kg	09.16.19 12.12		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101624

Date Prep: 09.16.19 10.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.16.19 18.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.16.19 18.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.16.19 18.39	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.16.19 18.39	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.16.19 18.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	09.16.19 18.39	
o-Terphenyl	84-15-1	106	%	70-135	09.16.19 18.39	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW27**
Lab Sample Id: 636900-007

Matrix: Soil
Date Collected: 09.11.19 10.50

Date Received: 09.13.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101525

Prep Method: SW5030B

% Moisture:

Date Prep: 09.13.19 18.09

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000984	0.000984	mg/kg	09.14.19 12.24	U	1
Toluene	108-88-3	<0.000984	0.000984	mg/kg	09.14.19 12.24	U	1
Ethylbenzene	100-41-4	<0.000984	0.000984	mg/kg	09.14.19 12.24	U	1
m,p-Xylenes	179601-23-1	<0.00197	0.00197	mg/kg	09.14.19 12.24	U	1
o-Xylene	95-47-6	<0.000984	0.000984	mg/kg	09.14.19 12.24	U	1
Total Xylenes	1330-20-7	<0.000984	0.000984	mg/kg	09.14.19 12.24	U	1
Total BTEX		<0.000984	0.000984	mg/kg	09.14.19 12.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	09.14.19 12.24		
1,4-Difluorobenzene	540-36-3	96	%	70-130	09.14.19 12.24		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW28**
Lab Sample Id: 636900-008

Matrix: Soil
Date Collected: 09.11.19 11.00

Date Received: 09.13.19 16.55
Sample Depth: 0 - 4.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101625

Date Prep: 09.16.19 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	545	49.6	mg/kg	09.16.19 12.18		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101624

Date Prep: 09.16.19 10.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.16.19 19.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	124	24.9	mg/kg	09.16.19 19.00		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.16.19 19.00	U	1
Total GRO-DRO	PHC628	124	24.9	mg/kg	09.16.19 19.00		1
Total TPH	PHC635	124	24.9	mg/kg	09.16.19 19.00		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	09.16.19 19.00	
o-Terphenyl	84-15-1	113	%	70-135	09.16.19 19.00	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **SW28**
Lab Sample Id: 636900-008

Matrix: Soil
Date Collected: 09.11.19 11.00

Date Received: 09.13.19 16.55
Sample Depth: 0 - 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101525

Date Prep: 09.13.19 18.09

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000990	0.000990	mg/kg	09.14.19 12.44	U	1
Toluene	108-88-3	<0.000990	0.000990	mg/kg	09.14.19 12.44	U	1
Ethylbenzene	100-41-4	<0.000990	0.000990	mg/kg	09.14.19 12.44	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	09.14.19 12.44	U	1
o-Xylene	95-47-6	<0.000990	0.000990	mg/kg	09.14.19 12.44	U	1
Total Xylenes	1330-20-7	<0.000990	0.000990	mg/kg	09.14.19 12.44	U	1
Total BTEX		<0.000990	0.000990	mg/kg	09.14.19 12.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.14.19 12.44		
4-Bromofluorobenzene	460-00-4	109	%	70-130	09.14.19 12.44		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS49A**
Lab Sample Id: 636900-009

Matrix: Soil
Date Collected: 09.11.19 12.30

Date Received: 09.13.19 16.55
Sample Depth: 7.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101625

Date Prep: 09.16.19 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9600	198	mg/kg	09.16.19 12.25		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101624

Date Prep: 09.16.19 10.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	275	25.0	mg/kg	09.16.19 19.20		1
Diesel Range Organics (DRO)	C10C28DRO	1270	25.0	mg/kg	09.16.19 19.20		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.16.19 19.20	U	1
Total GRO-DRO	PHC628	1550	25.0	mg/kg	09.16.19 19.20		1
Total TPH	PHC635	1550	25.0	mg/kg	09.16.19 19.20		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	09.16.19 19.20	
o-Terphenyl	84-15-1	135	%	70-135	09.16.19 19.20	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS49A**
Lab Sample Id: 636900-009

Matrix: Soil
Date Collected: 09.11.19 12.30

Date Received: 09.13.19 16.55
Sample Depth: 7.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101525

Prep Method: SW5030B

% Moisture:

Date Prep: 09.13.19 18.09

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000982	0.000982	mg/kg	09.14.19 13.04	U	1
Toluene	108-88-3	0.0157	0.000982	mg/kg	09.14.19 13.04		1
Ethylbenzene	100-41-4	0.0334	0.000982	mg/kg	09.14.19 13.04		1
m,p-Xylenes	179601-23-1	0.242	0.00196	mg/kg	09.14.19 13.04		1
o-Xylene	95-47-6	0.166	0.000982	mg/kg	09.14.19 13.04		1
Total Xylenes	1330-20-7	0.408	0.000982	mg/kg	09.14.19 13.04		1
Total BTEX		0.457	0.000982	mg/kg	09.14.19 13.04		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	09.14.19 13.04		
1,4-Difluorobenzene	540-36-3	112	%	70-130	09.14.19 13.04		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS51A**
Lab Sample Id: 636900-010

Matrix: Soil
Date Collected: 09.11.19 12.50

Date Received: 09.13.19 16.55
Sample Depth: 7.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101625

Date Prep: 09.16.19 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	741	19.7	mg/kg	09.16.19 12.44		2

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101624

Date Prep: 09.16.19 10.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.16.19 19.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.16.19 19.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.16.19 19.41	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.16.19 19.41	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.16.19 19.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	09.16.19 19.41	
o-Terphenyl	84-15-1	99	%	70-135	09.16.19 19.41	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS51A**
Lab Sample Id: 636900-010

Matrix: Soil
Date Collected: 09.11.19 12.50

Date Received: 09.13.19 16.55
Sample Depth: 7.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.13.19 18.09

Basis: Wet Weight

Seq Number: 3101525

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	09.14.19 13.23	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	09.14.19 13.23	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	09.14.19 13.23	U	1
m,p-Xylenes	179601-23-1	0.00232	0.00199	mg/kg	09.14.19 13.23		1
o-Xylene	95-47-6	0.00157	0.000996	mg/kg	09.14.19 13.23		1
Total Xylenes	1330-20-7	0.00389	0.000996	mg/kg	09.14.19 13.23		1
Total BTEX		0.00389	0.000996	mg/kg	09.14.19 13.23		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	127	%	70-130	09.14.19 13.23		
1,4-Difluorobenzene	540-36-3	109	%	70-130	09.14.19 13.23		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS72A**
Lab Sample Id: 636900-011

Matrix: Soil
Date Collected: 09.12.19 15.25

Date Received: 09.13.19 16.55
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101625

Date Prep: 09.16.19 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2170	49.7	mg/kg	09.16.19 12.50		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101624

Date Prep: 09.16.19 10.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.16.19 20.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.16.19 20.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.16.19 20.01	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.16.19 20.01	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.16.19 20.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	127	%	70-135	09.16.19 20.01	
o-Terphenyl	84-15-1	97	%	70-135	09.16.19 20.01	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS72A**
Lab Sample Id: 636900-011

Matrix: Soil
Date Collected: 09.12.19 15.25

Date Received: 09.13.19 16.55
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101525

Date Prep: 09.13.19 18.09

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000986	0.000986	mg/kg	09.14.19 13.43	U	1
Toluene	108-88-3	<0.000986	0.000986	mg/kg	09.14.19 13.43	U	1
Ethylbenzene	100-41-4	<0.000986	0.000986	mg/kg	09.14.19 13.43	U	1
m,p-Xylenes	179601-23-1	<0.00197	0.00197	mg/kg	09.14.19 13.43	U	1
o-Xylene	95-47-6	<0.000986	0.000986	mg/kg	09.14.19 13.43	U	1
Total Xylenes	1330-20-7	<0.000986	0.000986	mg/kg	09.14.19 13.43	U	1
Total BTEX		<0.000986	0.000986	mg/kg	09.14.19 13.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	129	%	70-130	09.14.19 13.43		
1,4-Difluorobenzene	540-36-3	119	%	70-130	09.14.19 13.43		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS79**
Lab Sample Id: 636900-012

Matrix: Soil
Date Collected: 09.12.19 12.35

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101625

Date Prep: 09.16.19 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	272	9.98	mg/kg	09.16.19 12.57		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101624

Date Prep: 09.16.19 10.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.16.19 20.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.16.19 20.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.16.19 20.22	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.16.19 20.22	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.16.19 20.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	09.16.19 20.22	
o-Terphenyl	84-15-1	101	%	70-135	09.16.19 20.22	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS79**
Lab Sample Id: 636900-012

Matrix: Soil
Date Collected: 09.12.19 12.35

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.14.19 15.09

Basis: Wet Weight

Seq Number: 3101533

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	09.14.19 20.44	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	09.14.19 20.44	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	09.14.19 20.44	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	09.14.19 20.44	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	09.14.19 20.44	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	09.14.19 20.44	U	1
Total BTEX		<0.000996	0.000996	mg/kg	09.14.19 20.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	09.14.19 20.44		
4-Bromofluorobenzene	460-00-4	116	%	70-130	09.14.19 20.44		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS80**
Lab Sample Id: 636900-013

Matrix: Soil
Date Collected: 09.12.19 12.30

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101625

Date Prep: 09.16.19 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	480	19.8	mg/kg	09.16.19 13.03		2

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101624

Date Prep: 09.16.19 10.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.16.19 20.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.16.19 20.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.16.19 20.42	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.16.19 20.42	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.16.19 20.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	130	%	70-135	09.16.19 20.42	
o-Terphenyl	84-15-1	100	%	70-135	09.16.19 20.42	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS80**
Lab Sample Id: 636900-013

Matrix: Soil
Date Collected: 09.12.19 12.30

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101533

Prep Method: SW5030B

% Moisture:

Date Prep: 09.14.19 15.09

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	09.14.19 21.03	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	09.14.19 21.03	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	09.14.19 21.03	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	09.14.19 21.03	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	09.14.19 21.03	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	09.14.19 21.03	U	1
Total BTEX		<0.000998	0.000998	mg/kg	09.14.19 21.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	117	%	70-130	09.14.19 21.03		
4-Bromofluorobenzene	460-00-4	111	%	70-130	09.14.19 21.03		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS81** Matrix: Soil Date Received: 09.13.19 16.55
 Lab Sample Id: 636900-014 Date Collected: 09.12.19 09.30 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.16.19 08.00 Basis: Wet Weight
 Seq Number: 3101625

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	276	100	mg/kg	09.16.19 13.10		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.16.19 10.00 Basis: Wet Weight
 Seq Number: 3101624

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.16.19 21.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.16.19 21.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.16.19 21.03	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.16.19 21.03	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.16.19 21.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	09.16.19 21.03	
o-Terphenyl	84-15-1	101	%	70-135	09.16.19 21.03	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS81**
Lab Sample Id: 636900-014

Matrix: Soil
Date Collected: 09.12.19 09.30

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.14.19 15.09

Basis: Wet Weight

Seq Number: 3101533

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	09.14.19 21.23	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	09.14.19 21.23	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	09.14.19 21.23	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	09.14.19 21.23	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	09.14.19 21.23	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	09.14.19 21.23	U	1
Total BTEX		<0.000998	0.000998	mg/kg	09.14.19 21.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	09.14.19 21.23		
1,4-Difluorobenzene	540-36-3	108	%	70-130	09.14.19 21.23		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS02A**
Lab Sample Id: 636900-015

Matrix: Soil
Date Collected: 09.12.19 09.35

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101625

Date Prep: 09.16.19 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	756	198	mg/kg	09.16.19 13.16		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101624

Date Prep: 09.16.19 10.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.16.19 21.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.16.19 21.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.16.19 21.44	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.16.19 21.44	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.16.19 21.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	129	%	70-135	09.16.19 21.44	
o-Terphenyl	84-15-1	98	%	70-135	09.16.19 21.44	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS02A**
Lab Sample Id: 636900-015

Matrix: Soil
Date Collected: 09.12.19 09.35

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101533

Date Prep: 09.14.19 15.09

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.14.19 21.43	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.14.19 21.43	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.14.19 21.43	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.14.19 21.43	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.14.19 21.43	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.14.19 21.43	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.14.19 21.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	09.14.19 21.43		
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.14.19 21.43		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS04A**
Lab Sample Id: 636900-016

Matrix: Soil
Date Collected: 09.12.19 09.20

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101625

Date Prep: 09.16.19 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	197	19.8	mg/kg	09.16.19 13.36		2

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101624

Date Prep: 09.16.19 10.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.16.19 22.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.16.19 22.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.16.19 22.04	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.16.19 22.04	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.16.19 22.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	09.16.19 22.04	
o-Terphenyl	84-15-1	99	%	70-135	09.16.19 22.04	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS04A**
Lab Sample Id: 636900-016

Matrix: Soil
Date Collected: 09.12.19 09.20

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101533

Date Prep: 09.14.19 15.09

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.14.19 22.02	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.14.19 22.02	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.14.19 22.02	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.14.19 22.02	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.14.19 22.02	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.14.19 22.02	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.14.19 22.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	09.14.19 22.02		
1,4-Difluorobenzene	540-36-3	104	%	70-130	09.14.19 22.02		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS03A**
Lab Sample Id: 636900-017

Matrix: Soil
Date Collected: 09.12.19 09.25

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101625

Date Prep: 09.16.19 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3340	98.4	mg/kg	09.16.19 13.42		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101624

Date Prep: 09.16.19 10.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.16.19 22.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.16.19 22.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.16.19 22.24	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.16.19 22.24	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.16.19 22.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	127	%	70-135	09.16.19 22.24	
o-Terphenyl	84-15-1	94	%	70-135	09.16.19 22.24	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS03A**
Lab Sample Id: 636900-017

Matrix: Soil
Date Collected: 09.12.19 09.25

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101533

Date Prep: 09.14.19 15.09

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.14.19 22.22	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.14.19 22.22	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.14.19 22.22	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	09.14.19 22.22	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.14.19 22.22	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.14.19 22.22	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.14.19 22.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	109	%	70-130	09.14.19 22.22		
4-Bromofluorobenzene	460-00-4	108	%	70-130	09.14.19 22.22		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS05A**
Lab Sample Id: 636900-018

Matrix: Soil
Date Collected: 09.12.19 12.35

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101625

Date Prep: 09.16.19 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	494	19.8	mg/kg	09.16.19 14.02		2

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101624

Date Prep: 09.16.19 10.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.16.19 22.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.16.19 22.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.16.19 22.45	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	09.16.19 22.45	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.16.19 22.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	09.16.19 22.45	
o-Terphenyl	84-15-1	96	%	70-135	09.16.19 22.45	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS05A**
Lab Sample Id: 636900-018

Matrix: Soil
Date Collected: 09.12.19 12.35

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.14.19 15.09

Basis: Wet Weight

Seq Number: 3101533

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.14.19 22.42	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.14.19 22.42	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.14.19 22.42	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.14.19 22.42	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.14.19 22.42	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.14.19 22.42	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.14.19 22.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	09.14.19 22.42		
1,4-Difluorobenzene	540-36-3	108	%	70-130	09.14.19 22.42		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS48A** Matrix: Soil Date Received: 09.13.19 16.55
 Lab Sample Id: 636900-019 Date Collected: 09.12.19 15.20 Sample Depth: 7.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.16.19 08.00 Basis: Wet Weight
 Seq Number: 3101625

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5890	99.8	mg/kg	09.16.19 14.08		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.16.19 10.00 Basis: Wet Weight
 Seq Number: 3101624

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.16.19 23.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.16.19 23.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.16.19 23.05	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.16.19 23.05	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.16.19 23.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	09.16.19 23.05	
o-Terphenyl	84-15-1	94	%	70-135	09.16.19 23.05	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS48A**
Lab Sample Id: 636900-019

Matrix: Soil
Date Collected: 09.12.19 15.20

Date Received: 09.13.19 16.55
Sample Depth: 7.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101533

Prep Method: SW5030B

% Moisture:

Date Prep: 09.14.19 15.09

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	09.14.19 23.41	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	09.14.19 23.41	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	09.14.19 23.41	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	09.14.19 23.41	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	09.14.19 23.41	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	09.14.19 23.41	U	1
Total BTEX		<0.000994	0.000994	mg/kg	09.14.19 23.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	09.14.19 23.41		
4-Bromofluorobenzene	460-00-4	103	%	70-130	09.14.19 23.41		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS83**
Lab Sample Id: 636900-020

Matrix: Soil
Date Collected: 09.12.19 09.15

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101625

Date Prep: 09.16.19 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	288	19.9	mg/kg	09.16.19 14.14		2

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101624

Date Prep: 09.16.19 10.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.16.19 23.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.16.19 23.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.16.19 23.26	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.16.19 23.26	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.16.19 23.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	09.16.19 23.26	
o-Terphenyl	84-15-1	93	%	70-135	09.16.19 23.26	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS83**
Lab Sample Id: 636900-020

Matrix: Soil
Date Collected: 09.12.19 09.15

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101533

Date Prep: 09.14.19 15.09

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.15.19 00.00	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.15.19 00.00	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.15.19 00.00	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	09.15.19 00.00	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.15.19 00.00	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.15.19 00.00	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.15.19 00.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	117	%	70-130	09.15.19 00.00		
4-Bromofluorobenzene	460-00-4	109	%	70-130	09.15.19 00.00		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS50A**
Lab Sample Id: 636900-021

Matrix: Soil
Date Collected: 09.11.19 12.40

Date Received: 09.13.19 16.55
Sample Depth: 7.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101625

Date Prep: 09.16.19 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3020	50.2	mg/kg	09.16.19 14.21		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101624

Date Prep: 09.16.19 10.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	165	25.0	mg/kg	09.16.19 23.46		1
Diesel Range Organics (DRO)	C10C28DRO	662	25.0	mg/kg	09.16.19 23.46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.16.19 23.46	U	1
Total GRO-DRO	PHC628	827	25.0	mg/kg	09.16.19 23.46		1
Total TPH	PHC635	827	25.0	mg/kg	09.16.19 23.46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	09.16.19 23.46	
o-Terphenyl	84-15-1	121	%	70-135	09.16.19 23.46	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS50A**
Lab Sample Id: 636900-021

Matrix: Soil
Date Collected: 09.11.19 12.40

Date Received: 09.13.19 16.55
Sample Depth: 7.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.14.19 15.09

Basis: Wet Weight

Seq Number: 3101533

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.15.19 02.18	U	1
Toluene	108-88-3	0.0440	0.00201	mg/kg	09.15.19 02.18		1
Ethylbenzene	100-41-4	0.126	0.00201	mg/kg	09.15.19 02.18		1
m,p-Xylenes	179601-23-1	1.17	0.00402	mg/kg	09.15.19 02.18		1
o-Xylene	95-47-6	0.377	0.00201	mg/kg	09.15.19 02.18		1
Total Xylenes	1330-20-7	1.55	0.00201	mg/kg	09.15.19 02.18		1
Total BTEX		1.72	0.00201	mg/kg	09.15.19 02.18		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	128	%	70-130	09.15.19 02.18		
1,4-Difluorobenzene	540-36-3	127	%	70-130	09.15.19 02.18		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS66A** Matrix: Soil Date Received: 09.13.19 16.55
 Lab Sample Id: 636900-022 Date Collected: 09.11.19 13.30 Sample Depth: 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.16.19 08.00 Basis: Wet Weight
 Seq Number: 3101625

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	670	19.7	mg/kg	09.16.19 14.27		2

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.16.19 10.00 Basis: Wet Weight
 Seq Number: 3101624

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.17.19 00.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.17.19 00.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.17.19 00.07	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	09.17.19 00.07	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.17.19 00.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	09.17.19 00.07	
o-Terphenyl	84-15-1	94	%	70-135	09.17.19 00.07	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS66A**
Lab Sample Id: 636900-022

Matrix: Soil
Date Collected: 09.11.19 13.30

Date Received: 09.13.19 16.55
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101533

Date Prep: 09.14.19 15.09

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	09.15.19 00.20	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	09.15.19 00.20	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	09.15.19 00.20	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	09.15.19 00.20	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	09.15.19 00.20	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	09.15.19 00.20	U	1
Total BTEX		<0.000996	0.000996	mg/kg	09.15.19 00.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	09.15.19 00.20		
4-Bromofluorobenzene	460-00-4	103	%	70-130	09.15.19 00.20		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS78**
Lab Sample Id: 636900-023

Matrix: Soil
Date Collected: 09.11.19 12.10

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101626

Date Prep: 09.16.19 08.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	37.0	9.98	mg/kg	09.16.19 15.06		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101624

Date Prep: 09.16.19 10.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.17.19 00.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.17.19 00.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.17.19 00.27	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	09.17.19 00.27	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.17.19 00.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	09.17.19 00.27	
o-Terphenyl	84-15-1	90	%	70-135	09.17.19 00.27	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS78**
Lab Sample Id: 636900-023

Matrix: Soil
Date Collected: 09.11.19 12.10

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.14.19 15.09

Basis: Wet Weight

Seq Number: 3101533

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.15.19 00.40	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.15.19 00.40	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.15.19 00.40	U	1
m,p-Xylenes	179601-23-1	0.00843	0.00201	mg/kg	09.15.19 00.40		1
o-Xylene	95-47-6	0.00297	0.00101	mg/kg	09.15.19 00.40		1
Total Xylenes	1330-20-7	0.0114	0.00101	mg/kg	09.15.19 00.40		1
Total BTEX		0.0114	0.00101	mg/kg	09.15.19 00.40		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	09.15.19 00.40		
4-Bromofluorobenzene	460-00-4	113	%	70-130	09.15.19 00.40		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS65A**
Lab Sample Id: 636900-024

Matrix: Soil
Date Collected: 09.11.19 13.25

Date Received: 09.13.19 16.55
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101626

Date Prep: 09.16.19 08.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1860	49.9	mg/kg	09.16.19 15.25		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101624

Date Prep: 09.16.19 10.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.17.19 00.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.17.19 00.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.17.19 00.48	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.17.19 00.48	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.17.19 00.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	09.17.19 00.48	
o-Terphenyl	84-15-1	94	%	70-135	09.17.19 00.48	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS65A**
Lab Sample Id: 636900-024

Matrix: Soil
Date Collected: 09.11.19 13.25

Date Received: 09.13.19 16.55
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101533

Date Prep: 09.14.19 15.09

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000992	0.000992	mg/kg	09.15.19 00.59	U	1
Toluene	108-88-3	<0.000992	0.000992	mg/kg	09.15.19 00.59	U	1
Ethylbenzene	100-41-4	<0.000992	0.000992	mg/kg	09.15.19 00.59	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	09.15.19 00.59	U	1
o-Xylene	95-47-6	<0.000992	0.000992	mg/kg	09.15.19 00.59	U	1
Total Xylenes	1330-20-7	<0.000992	0.000992	mg/kg	09.15.19 00.59	U	1
Total BTEX		<0.000992	0.000992	mg/kg	09.15.19 00.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	09.15.19 00.59		
4-Bromofluorobenzene	460-00-4	105	%	70-130	09.15.19 00.59		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS62A**
Lab Sample Id: 636900-025

Matrix: Soil
Date Collected: 09.11.19 13.20

Date Received: 09.13.19 16.55
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101626

Date Prep: 09.16.19 08.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1560	50.3	mg/kg	09.16.19 15.41		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101631

Date Prep: 09.16.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.17.19 02.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	79.9	25.0	mg/kg	09.17.19 02.29		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.17.19 02.29	U	1
Total GRO-DRO	PHC628	79.9	25.0	mg/kg	09.17.19 02.29		1
Total TPH	PHC635	79.9	25.0	mg/kg	09.17.19 02.29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	09.17.19 02.29	
o-Terphenyl	84-15-1	93	%	70-135	09.17.19 02.29	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS62A**
Lab Sample Id: 636900-025

Matrix: Soil
Date Collected: 09.11.19 13.20

Date Received: 09.13.19 16.55
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.14.19 15.09

Basis: Wet Weight

Seq Number: 3101533

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	09.15.19 01.19	U	1
Toluene	108-88-3	0.00171	0.000996	mg/kg	09.15.19 01.19		1
Ethylbenzene	100-41-4	0.00214	0.000996	mg/kg	09.15.19 01.19		1
m,p-Xylenes	179601-23-1	0.0115	0.00199	mg/kg	09.15.19 01.19		1
o-Xylene	95-47-6	0.0142	0.000996	mg/kg	09.15.19 01.19		1
Total Xylenes	1330-20-7	0.0257	0.000996	mg/kg	09.15.19 01.19		1
Total BTEX		0.0296	0.000996	mg/kg	09.15.19 01.19		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	128	%	70-130	09.15.19 01.19		
1,4-Difluorobenzene	540-36-3	114	%	70-130	09.15.19 01.19		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS57A** Matrix: Soil Date Received: 09.13.19 16.55
 Lab Sample Id: 636900-026 Date Collected: 09.11.19 13.15 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.16.19 08.09 Basis: Wet Weight
 Seq Number: 3101626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1070	49.8	mg/kg	09.16.19 15.47		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.16.19 11.00 Basis: Wet Weight
 Seq Number: 3101631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.17.19 03.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.17.19 03.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.17.19 03.30	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	09.17.19 03.30	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.17.19 03.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	09.17.19 03.30	
o-Terphenyl	84-15-1	100	%	70-135	09.17.19 03.30	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS57A**
Lab Sample Id: 636900-026

Matrix: Soil
Date Collected: 09.11.19 13.15

Date Received: 09.13.19 16.55
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.14.19 15.09

Basis: Wet Weight

Seq Number: 3101533

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.15.19 01.39	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.15.19 01.39	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.15.19 01.39	U	1
m,p-Xylenes	179601-23-1	0.00538	0.00201	mg/kg	09.15.19 01.39		1
o-Xylene	95-47-6	0.00205	0.00101	mg/kg	09.15.19 01.39		1
Total Xylenes	1330-20-7	0.00743	0.00101	mg/kg	09.15.19 01.39		1
Total BTEX		0.00743	0.00101	mg/kg	09.15.19 01.39		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	09.15.19 01.39		
4-Bromofluorobenzene	460-00-4	115	%	70-130	09.15.19 01.39		



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: FS77
Lab Sample Id: 636900-027

Matrix: Soil
Date Collected: 09.11.19 12.05

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101626

Date Prep: 09.16.19 08.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	54.4	9.94	mg/kg	09.16.19 15.54		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101631

Date Prep: 09.16.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.17.19 03.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.17.19 03.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.17.19 03.50	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	09.17.19 03.50	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.17.19 03.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	09.17.19 03.50	
o-Terphenyl	84-15-1	99	%	70-135	09.17.19 03.50	



Certificate of Analytical Results 636900

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well#1

Sample Id: **FS77**
Lab Sample Id: 636900-027

Matrix: Soil
Date Collected: 09.11.19 12.05

Date Received: 09.13.19 16.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.14.19 15.09

Basis: Wet Weight

Seq Number: 3101533

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.15.19 01.58	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.15.19 01.58	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.15.19 01.58	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.15.19 01.58	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.15.19 01.58	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.15.19 01.58	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.15.19 01.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	09.15.19 01.58		
4-Bromofluorobenzene	460-00-4	102	%	70-130	09.15.19 01.58		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 Obs Well#1

Analytical Method: Chloride by EPA 300

Seq Number: 3101493

MB Sample Id: 7686190-1-BLK

Matrix: Solid

LCS Sample Id: 7686190-1-BKS

Prep Method: E300P

Date Prep: 09.13.19

LCSD Sample Id: 7686190-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	257	103	256	102	90-110	0	20	mg/kg	09.13.19 19:19	

Analytical Method: Chloride by EPA 300

Seq Number: 3101625

MB Sample Id: 7686202-1-BLK

Matrix: Solid

LCS Sample Id: 7686202-1-BKS

Prep Method: E300P

Date Prep: 09.16.19

LCSD Sample Id: 7686202-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	228	91	258	103	90-110	12	20	mg/kg	09.16.19 11:18	

Analytical Method: Chloride by EPA 300

Seq Number: 3101626

MB Sample Id: 7686203-1-BLK

Matrix: Solid

LCS Sample Id: 7686203-1-BKS

Prep Method: E300P

Date Prep: 09.16.19

LCSD Sample Id: 7686203-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	267	107	268	107	90-110	0	20	mg/kg	09.16.19 14:53	

Analytical Method: Chloride by EPA 300

Seq Number: 3101493

Parent Sample Id: 636891-001

Matrix: Soil

MS Sample Id: 636891-001 S

Prep Method: E300P

Date Prep: 09.13.19

MSD Sample Id: 636891-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	44.8	996	1050	101	1090	105	90-110	4	20	mg/kg	09.13.19 19:38	

Analytical Method: Chloride by EPA 300

Seq Number: 3101493

Parent Sample Id: 636893-001

Matrix: Solid

MS Sample Id: 636893-001 S

Prep Method: E300P

Date Prep: 09.13.19

MSD Sample Id: 636893-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	199	994	1320	113	1350	116	90-110	2	20	mg/kg	09.13.19 20:49	X

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

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

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

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



LT Environmental, Inc.

Remuda 25 Obs Well#1

Analytical Method: Chloride by EPA 300

Seq Number: 3101625

Parent Sample Id: 636900-005

Matrix: Soil

MS Sample Id: 636900-005 S

Prep Method: E300P

Date Prep: 09.16.19

MSD Sample Id: 636900-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.83	200	201	98	217	106	90-110	8	20	mg/kg	09.16.19 11:52	

Analytical Method: Chloride by EPA 300

Seq Number: 3101625

Parent Sample Id: 636900-015

Matrix: Soil

MS Sample Id: 636900-015 S

Prep Method: E300P

Date Prep: 09.16.19

MSD Sample Id: 636900-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	756	3950	5220	113	5230	113	90-110	0	20	mg/kg	09.16.19 13:23	X

Analytical Method: Chloride by EPA 300

Seq Number: 3101626

Parent Sample Id: 636900-023

Matrix: Solid

MS Sample Id: 636900-023 S

Prep Method: E300P

Date Prep: 09.16.19

MSD Sample Id: 636900-023 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	37.0	200	244	104	265	115	90-110	8	20	mg/kg	09.16.19 15:13	X

Analytical Method: Chloride by EPA 300

Seq Number: 3101626

Parent Sample Id: 636927-009

Matrix: Solid

MS Sample Id: 636927-009 S

Prep Method: E300P

Date Prep: 09.16.19

MSD Sample Id: 636927-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	395	403	935	134	948	138	90-110	1	20	mg/kg	09.16.19 17:24	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3101548

MB Sample Id: 7686198-1-BLK

Matrix: Solid

LCS Sample Id: 7686198-1-BKS

Prep Method: SW8015P

Date Prep: 09.13.19

LCSD Sample Id: 7686198-1-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)	<9.88	1000	923	92	936	94	70-135	1	35	mg/kg	09.13.19 11:19	
Diesel Range Organics (DRO)	<9.88	1000	851	85	897	90	70-135	5	35	mg/kg	09.13.19 11:19	

Surrogate

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		120		124		70-135	%	09.13.19 11:19
o-Terphenyl	89		100		112		70-135	%	09.13.19 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



LT Environmental, Inc.

Remuda 25 Obs Well#1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3101624

MB Sample Id: 7686271-1-BLK

Matrix: Solid

LCS Sample Id: 7686271-1-BKS

Prep Method: SW8015P

Date Prep: 09.16.19

LCSD Sample Id: 7686271-1-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)	<25.0	1000	982	98	1020	102	70-135	4	35	mg/kg	09.16.19 16:35	
Diesel Range Organics (DRO)	<25.0	1000	935	94	983	98	70-135	5	35	mg/kg	09.16.19 16:35	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	120		128		127		70-135	%	09.16.19 16:35			
o-Terphenyl	102		114		115		70-135	%	09.16.19 16:35			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3101631

MB Sample Id: 7686319-1-BLK

Matrix: Solid

LCS Sample Id: 7686319-1-BKS

Prep Method: SW8015P

Date Prep: 09.16.19

LCSD Sample Id: 7686319-1-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)	<25.0	1000	979	98	982	98	70-135	0	35	mg/kg	09.17.19 01:49	
Diesel Range Organics (DRO)	<25.0	1000	908	91	903	90	70-135	1	35	mg/kg	09.17.19 01:49	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	131		125		125		70-135	%	09.17.19 01:49			
o-Terphenyl	100		105		102		70-135	%	09.17.19 01:49			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3101548

Parent Sample Id: 636891-001

Matrix: Soil

MS Sample Id: 636891-001 S

Prep Method: SW8015P

Date Prep: 09.13.19

MSD Sample Id: 636891-001 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)	<9.93	1010	998	99	958	96	70-135	4	35	mg/kg	09.13.19 17:47	
Diesel Range Organics (DRO)	22.6	1010	918	89	824	80	70-135	11	35	mg/kg	09.13.19 17:47	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			129		126		70-135	%	09.13.19 17:47			
o-Terphenyl			109		116		70-135	%	09.13.19 17:47			

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



LT Environmental, Inc.

Remuda 25 Obs Well#1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3101624

Parent Sample Id: 636900-005

Matrix: Soil

MS Sample Id: 636900-005 S

Prep Method: SW8015P

Date Prep: 09.16.19

MSD Sample Id: 636900-005 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)	<24.9	995	980	98	965	97	70-135	2	35	mg/kg	09.16.19 17:37	
Diesel Range Organics (DRO)	<24.9	995	943	95	925	93	70-135	2	35	mg/kg	09.16.19 17:37	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	123		126		70-135	%	09.16.19 17:37
o-Terphenyl	110		111		70-135	%	09.16.19 17:37

Analytical Method: TPH by SW8015 Mod

Seq Number: 3101631

Parent Sample Id: 636900-025

Matrix: Soil

MS Sample Id: 636900-025 S

Prep Method: SW8015P

Date Prep: 09.16.19

MSD Sample Id: 636900-025 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)	<25.0	998	1090	109	1100	110	70-135	1	35	mg/kg	09.17.19 02:49	
Diesel Range Organics (DRO)	79.9	998	1080	100	1130	105	70-135	5	35	mg/kg	09.17.19 02:49	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		127		70-135	%	09.17.19 02:49
o-Terphenyl	113		107		70-135	%	09.17.19 02:49

Analytical Method: BTEX by EPA 8021B

Seq Number: 3101525

MB Sample Id: 7686228-1-BLK

Matrix: Solid

LCS Sample Id: 7686228-1-BKS

Prep Method: SW5030B

Date Prep: 09.13.19

LCSD Sample Id: 7686228-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0940	94	0.0971	97	70-130	3	35	mg/kg	09.13.19 23:50	
Toluene	<0.00100	0.100	0.0994	99	0.105	105	70-130	5	35	mg/kg	09.13.19 23:50	
Ethylbenzene	<0.00100	0.100	0.111	111	0.117	117	71-129	5	35	mg/kg	09.13.19 23:50	
m,p-Xylenes	<0.00200	0.200	0.228	114	0.239	120	70-135	5	35	mg/kg	09.13.19 23:50	
o-Xylene	<0.00100	0.100	0.111	111	0.117	117	71-133	5	35	mg/kg	09.13.19 23:50	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		101		104		70-130	%	09.13.19 23:50
4-Bromofluorobenzene	107		114		116		70-130	%	09.13.19 23:50

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.

Remuda 25 Obs Well#1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3101533

MB Sample Id: 7686229-1-BLK

Matrix: Solid

LCS Sample Id: 7686229-1-BKS

Prep Method: SW5030B

Date Prep: 09.14.19

LCSD Sample Id: 7686229-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.101	101	0.103	103	70-130	2	35	mg/kg	09.14.19 17:27	
Toluene	<0.00100	0.100	0.106	106	0.0937	94	70-130	12	35	mg/kg	09.14.19 17:27	
Ethylbenzene	<0.00100	0.100	0.0960	96	0.0930	93	71-129	3	35	mg/kg	09.14.19 17:27	
m,p-Xylenes	<0.00200	0.200	0.211	106	0.202	101	70-135	4	35	mg/kg	09.14.19 17:27	
o-Xylene	<0.00100	0.100	0.0881	88	0.106	106	71-133	18	35	mg/kg	09.14.19 17:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		99		92		70-130	%	09.14.19 17:27
4-Bromofluorobenzene	89		108		102		70-130	%	09.14.19 17:27

Analytical Method: BTEX by EPA 8021B

Seq Number: 3101525

Parent Sample Id: 636900-002

Matrix: Soil

MS Sample Id: 636900-002 S

Prep Method: SW5030B

Date Prep: 09.13.19

MSD Sample Id: 636900-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000992	0.0992	0.0880	89	0.0847	85	70-130	4	35	mg/kg	09.14.19 01:09	
Toluene	<0.000992	0.0992	0.0931	94	0.0886	89	70-130	5	35	mg/kg	09.14.19 01:09	
Ethylbenzene	<0.000992	0.0992	0.104	105	0.100	100	71-129	4	35	mg/kg	09.14.19 01:09	
m,p-Xylenes	<0.00198	0.198	0.213	108	0.203	102	70-135	5	35	mg/kg	09.14.19 01:09	
o-Xylene	<0.000992	0.0992	0.106	107	0.101	101	71-133	5	35	mg/kg	09.14.19 01:09	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		105		70-130	%	09.14.19 01:09
4-Bromofluorobenzene	128		116		70-130	%	09.14.19 01:09

Analytical Method: BTEX by EPA 8021B

Seq Number: 3101533

Parent Sample Id: 636893-001

Matrix: Soil

MS Sample Id: 636893-001 S

Prep Method: SW5030B

Date Prep: 09.14.19

MSD Sample Id: 636893-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00101	0.101	0.0966	96	0.0885	89	70-130	9	35	mg/kg	09.14.19 18:46	
Toluene	<0.00101	0.101	0.103	102	0.0970	97	70-130	6	35	mg/kg	09.14.19 18:46	
Ethylbenzene	<0.00101	0.101	0.116	115	0.109	109	71-129	6	35	mg/kg	09.14.19 18:46	
m,p-Xylenes	<0.00202	0.202	0.235	116	0.221	111	70-135	6	35	mg/kg	09.14.19 18:46	
o-Xylene	<0.00101	0.101	0.116	115	0.109	109	71-133	6	35	mg/kg	09.14.19 18:46	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	122		122		70-130	%	09.14.19 18:46
4-Bromofluorobenzene	119		119		70-130	%	09.14.19 18:46

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:

232900

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) 355-0800 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

www.xenco.com

Page 1 of 3

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littel
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:	dmair@xenco.com kmlittel@xenco.com

Program: ☐ UST/PST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐	
State of Project:	
Reporting Level: ☐ I ☐ II ☐ III ☐ IV ☐ V	Deliverables: EDO ☐ ADAPT ☐ Other: ☐

Project Name:	Remuda 25 Obs Well #1	Turn Around	☐
Project Number:		Routine	☐
P.O. Number:	2RP-5309	Rush:	3 day
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT		Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☐ No ☐
Temperature (°C):	3.8	Thermometer ID:	T-MMA-007		
Received Inlet:	Yes ☒ No ☐	Correction Factor:	-0.2		
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	27		
Sample Custody Seals:	Yes ☒ No ☐ N/A				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers												
					TPH (EPA 8015)	BTEX (EPA 9-0021)	Chloride (EPA 300.0)										
SW31	S	09/19/19	1250	0-5'	X	X	X										
SW32	S		1255	6-4'	X	X	X										
SW33	S		1300	0-6'	X	X	X										
SW34	S		1305	0-4'	X	X	X										
SW29	S	09/19/19	1110	0-5'	X	X	X										
SW30	S		1200	0-4'	X	X	X										
SW27	S		1050	0-4'	X	X	X										
SW28	S		1100	0-4.5'	X	X	X										
FS49A	S	09/19/19	1230	7.5'	X	X	X										
FS51A	S	09/19/19	1250	7.5'	X	X	X										

ANALYSIS REQUEST																
Work Order Notes																

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13Pm 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 8010 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
 1631 / 245.1 / 7470 / 7471 : Hg

Signature of the document and not a signature of samples constitute 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



Chain of Custody

Work Order No:

(030100

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) 794-1286
 Hobbs, NM (505-382-7500) Phoenix, AZ (480-355-0500) Atlanta, GA (770-448-8900) Tampa, FL (813-820-2000)

www.xenco.com

Page 2 of 3

Project Manager:	Dan Moir	Bill to: (if other):	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:	dmoir@ltenv.com kmlittle@ltenv.com
Project Name:	Remuda 25 Ops Well #1	Turn Around	
Project Number:		Routine	☐
P.O. Number:	2RP-5309	Rush	3 day
Sampler's Name:	Robert McAfee	Due Date	

SAMPLE RECEIPT				ANALYSIS REQUEST				Work Order Notes		
Temperature (°C):	Temp Blank:	Yes	No	Wet Ice:	Yes	No	TAT starts the day received by the lab, & received by 4:30pm Sample Comments:			
Received intact:	Yes	No	MA	Correction Factor:	50.00					
Cooler Custody Seals:	Yes	No	MA	Total Containers:						
Sample Custody Seals:	Yes	No	N/A							
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)		
FS22 A	S	09/12/19	1525	6'	1	X	X	X		
FS37	S		1235	4'	1	X	X	X		
FS30			1230	4'	1	X	X	X		
FS81			0930	4'	1	X	X	X		
FS02A			0935	4'	1	X	X	X		
FS64A			0920	4'	1	X	X	X		
FS03A			0925	4'	1	X	X	X		
FS05A			1235	4'	1	X	X	X		
FS48A			1520	7.5'	1	X	X	X		
FS83	Y		0915	4'	Y	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 sample constitutes a valid purchase order from client company to Xenco, its affiliates and sub-contractors. 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>[Signature]</i>	<i>[Signature]</i>	9/19/19 14:55			



Chain of Custody

Work Order No:

436700

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 508-3334
 Midland, TX (432-704-5446) El Paso, TX (915) 855-3443 Lubbock, TX (806) 794-1296

Phoenix, AZ (480) 355-0100 Atlanta, GA (770) 449-0830 Tampa, FL (813) 528-2000

www.xenco.com

Page 3 of 3

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrel
Company Name:	LT Environmental, Inc., Perrin 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:	dimol@lthenv.com mcafee@lthenv.com

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

ANALYSIS REQUEST

Work Order Notes

Project Name:	Remuda 25 Obs Well #1	Turn Around	☐
Project Number:		Routine	☐
P.O. Number:	2RP-5309	Rush: 3 day	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):						
Received Inlet:	Yes	No	Thermometer ID	506291		
Cooler Custody Seals:	Yes	No	Correction Factor:			
Sample Custody Seals:	Yes	No	Total Containers:			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers

FS20A	S	04/11/14	1240	7.5'	1
FS66A			1330	6'	X
FS78			1210	4'	X
FS65A			1325	6'	X
FS62A			1320	5'	X
FS67A			1315	5'	X
FS77			1205	4'	X

TPH (EPA 8015)	
BTEX (EPA 0-8021)	
Chloride (EPA 300.0)	

Sample Comments

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

Composite

Total 200.7 / 6010 200.8 / 6020:
 Circle Method(s) and Metal(s) to be analyzed

BRORA 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: BRORA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
 1631 / 245.1 / 7470 / 7471 : Hg

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 exposures 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



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 09/13/2019 04:55:00 PM

Work Order #: 636900

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 09/13/2019

Checklist reviewed by:

Jessica Kramer

Date: 09/17/2019

Analytical Report 636970

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda 25 Obs Well #1

18-SEP-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

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

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



18-SEP-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **636970**

Remuda 25 Obs Well #1

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 636970. 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. 636970 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

**Sample Cross Reference 636970****LT Environmental, Inc., Arvada, CO**

Remuda 25 Obs Well #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH17	S	09-13-19 10:20	1 ft	636970-001
PH17A	S	09-13-19 10:40	3 ft	636970-002
PH18	S	09-13-19 10:55	1 ft	636970-003
PH18A	S	09-13-19 11:00	2 ft	636970-004
PH19	S	09-13-19 11:20	1 ft	636970-005
PH19A	S	09-13-19 11:25	2 ft	636970-006
PH20	S	09-13-19 11:40	1 ft	636970-007
PH20A	S	09-13-19 11:45	2 ft	636970-008
PH21	S	09-13-19 12:45	1 ft	636970-009
PH21A	S	09-13-19 12:50	2 ft	636970-010
PH22	S	09-13-19 13:15	1 ft	636970-011
PH22A	S	09-13-19 13:20	2 ft	636970-012

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: Remuda 25 Obs Well #1**Project ID:
Work Order Number(s): 636970Report Date: 18-SEP-19
Date Received: 09/16/2019

Sample receipt non conformances and comments:None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3101779 BTEX by EPA 8021B

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

Samples affected are: 636970-001 S.

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

Lab Sample ID 636970-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike.

Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 636970-001, -002, -

003, -004, -005, -006, -007, -008, -009, -010, -011, -012.

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

Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.

Samples in the analytical batch are: 636970-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012



Certificate of Analysis Summary 636970

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Sep-16-19 12:40 pm

Report Date: 18-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636970-001	636970-002	636970-003	636970-004	636970-005	636970-006
	<i>Field Id:</i>	PH17	PH17A	PH18	PH18A	PH19	PH19A
	<i>Depth:</i>	1- ft	3- ft	1- ft	2- ft	1- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-13-19 10:20	Sep-13-19 10:40	Sep-13-19 10:55	Sep-13-19 11:00	Sep-13-19 11:20	Sep-13-19 11:25
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Sep-17-19 11:30	Sep-17-19 11:30	Sep-17-19 11:30	Sep-17-19 11:30	Sep-17-19 11:30	Sep-17-19 11:30
	<i>Analyzed:</i>	Sep-17-19 14:01	Sep-17-19 14:21	Sep-17-19 14:41	Sep-17-19 15:01	Sep-17-19 15:21	Sep-17-19 15:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
Toluene		<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
Ethylbenzene		<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
m,p-Xylenes		0.0292 0.00397	<0.00400 0.00400	<0.00398 0.00398	<0.00402 0.00402	<0.00398 0.00398	<0.00398 0.00398
o-Xylene		0.0165 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
Total Xylenes		0.0457 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
Total BTEX		0.0457 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Sep-17-19 12:50	Sep-17-19 12:50	Sep-17-19 12:50	Sep-17-19 12:50	Sep-17-19 12:50	Sep-17-19 12:50
	<i>Analyzed:</i>	Sep-17-19 13:46	Sep-17-19 13:52	Sep-17-19 13:58	Sep-17-19 13:29	Sep-17-19 14:03	Sep-17-19 16:12
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1840 50.0	863 50.1	500 25.2	69.5 5.03	93.0 25.3	47.6 4.96
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Sep-17-19 11:02	Sep-17-19 11:02	Sep-17-19 11:02	Sep-17-19 11:02	Sep-17-19 11:02	Sep-17-19 11:02
	<i>Analyzed:</i>	Sep-17-19 12:31	Sep-17-19 13:34	Sep-17-19 16:20	Sep-17-19 16:40	Sep-17-19 17:02	Sep-17-19 17:23
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0
Diesel Range Organics (DRO)		1070 49.9	142 49.8	61.6 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		117 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0
Total GRO-DRO		1070 49.9	142 49.8	61.6 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0
Total TPH		1190 49.9	142 49.8	61.6 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0

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
Project Assistant



Certificate of Analysis Summary 636970

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Sep-16-19 12:40 pm

Report Date: 18-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636970-007	636970-008	636970-009	636970-010	636970-011	636970-012
	<i>Field Id:</i>	PH20	PH20A	PH21	PH21A	PH22	PH22A
	<i>Depth:</i>	1- ft	2- ft	1- ft	2- ft	1- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-13-19 11:40	Sep-13-19 11:45	Sep-13-19 12:45	Sep-13-19 12:50	Sep-13-19 13:15	Sep-13-19 13:20
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Sep-17-19 11:30	Sep-17-19 11:30	Sep-17-19 11:30	Sep-17-19 11:30	Sep-17-19 11:30	Sep-17-19 11:30
	<i>Analyzed:</i>	Sep-17-19 16:02	Sep-17-19 16:22	Sep-17-19 16:42	Sep-17-19 17:02	Sep-17-19 18:20	Sep-17-19 18:40
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00397 0.00397	<0.00401 0.00401	<0.00403 0.00403	<0.00403 0.00403	<0.00400 0.00400
o-Xylene		<0.00199 0.00199	<0.00198 0.00198	0.00563 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00198 0.00198	0.00563 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00198 0.00198	0.00563 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Sep-17-19 12:50	Sep-17-19 12:50	Sep-17-19 12:50	Sep-17-19 12:50	Sep-17-19 12:50	Sep-17-19 12:50
	<i>Analyzed:</i>	Sep-17-19 14:27	Sep-17-19 14:33	Sep-17-19 14:38	Sep-17-19 14:44	Sep-17-19 15:08	Sep-17-19 16:17
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		258 25.1	175 25.0	330 25.0	298 50.0	103 50.4	43.5 4.97
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Sep-17-19 11:02	Sep-17-19 11:02	Sep-17-19 11:02	Sep-17-19 11:02	Sep-17-19 11:02	Sep-17-19 11:02
	<i>Analyzed:</i>	Sep-17-19 17:44	Sep-17-19 18:06	Sep-17-19 18:27	Sep-17-19 18:49	Sep-17-19 19:32	Sep-17-19 19:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.8 49.8	<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9
Diesel Range Organics (DRO)		282 49.8	<49.9 49.9	<50.0 50.0	95.2 49.9	<50.0 50.0	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9
Total GRO-DRO		282 49.8	<49.9 49.9	<50.0 50.0	95.2 49.9	<50.0 50.0	<49.9 49.9
Total TPH		282 49.8	<49.9 49.9	<50.0 50.0	95.2 49.9	<50.0 50.0	<49.9 49.9

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH17**
Lab Sample Id: 636970-001

Matrix: Soil
Date Collected: 09.13.19 10.20

Date Received: 09.16.19 12.40
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3101735

Date Prep: 09.17.19 12.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1840	50.0	mg/kg	09.17.19 13.46		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101746

Date Prep: 09.17.19 11.02

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.17.19 12.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	1070	49.9	mg/kg	09.17.19 12.31		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	117	49.9	mg/kg	09.17.19 12.31		1
Total GRO-DRO	PHC628	1070	49.9	mg/kg	09.17.19 12.31		1
Total TPH	PHC635	1190	49.9	mg/kg	09.17.19 12.31		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	09.17.19 12.31	
o-Terphenyl	84-15-1	111	%	70-135	09.17.19 12.31	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH17**
Lab Sample Id: 636970-001

Matrix: Soil
Date Collected: 09.13.19 10.20

Date Received: 09.16.19 12.40
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101779

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	09.17.19 14.01	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.17.19 14.01	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.17.19 14.01	U	1
m,p-Xylenes	179601-23-1	0.0292	0.00397	mg/kg	09.17.19 14.01		1
o-Xylene	95-47-6	0.0165	0.00198	mg/kg	09.17.19 14.01		1
Total Xylenes	1330-20-7	0.0457	0.00198	mg/kg	09.17.19 14.01		1
Total BTEX		0.0457	0.00198	mg/kg	09.17.19 14.01		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	124	%	70-130	09.17.19 14.01		
1,4-Difluorobenzene	540-36-3	97	%	70-130	09.17.19 14.01		



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH17A** Matrix: Soil Date Received: 09.16.19 12.40
 Lab Sample Id: 636970-002 Date Collected: 09.13.19 10.40 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 09.17.19 12.50 Basis: Wet Weight
 Seq Number: 3101735 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	863	50.1	mg/kg	09.17.19 13.52		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.17.19 11.02 Basis: Wet Weight
 Seq Number: 3101746 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	09.17.19 13.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	142	49.8	mg/kg	09.17.19 13.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	09.17.19 13.34	U	1
Total GRO-DRO	PHC628	142	49.8	mg/kg	09.17.19 13.34		1
Total TPH	PHC635	142	49.8	mg/kg	09.17.19 13.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	09.17.19 13.34	
o-Terphenyl	84-15-1	122	%	70-135	09.17.19 13.34	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH17A**
Lab Sample Id: 636970-002

Matrix: Soil
Date Collected: 09.13.19 10.40

Date Received: 09.16.19 12.40
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101779

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.17.19 14.21	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.17.19 14.21	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.17.19 14.21	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	09.17.19 14.21	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.17.19 14.21	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.17.19 14.21	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.17.19 14.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	122	%	70-130	09.17.19 14.21		
1,4-Difluorobenzene	540-36-3	95	%	70-130	09.17.19 14.21		



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH18**
Lab Sample Id: 636970-003

Matrix: Soil
Date Collected: 09.13.19 10.55

Date Received: 09.16.19 12.40
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3101735

Date Prep: 09.17.19 12.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	500	25.2	mg/kg	09.17.19 13.58		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101746

Date Prep: 09.17.19 11.02

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.17.19 16.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	61.6	50.0	mg/kg	09.17.19 16.20		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.17.19 16.20	U	1
Total GRO-DRO	PHC628	61.6	50.0	mg/kg	09.17.19 16.20		1
Total TPH	PHC635	61.6	50.0	mg/kg	09.17.19 16.20		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	09.17.19 16.20	
o-Terphenyl	84-15-1	114	%	70-135	09.17.19 16.20	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH18**
Lab Sample Id: 636970-003

Matrix: Soil
Date Collected: 09.13.19 10.55

Date Received: 09.16.19 12.40
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101779

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.17.19 14.41	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.17.19 14.41	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.17.19 14.41	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.17.19 14.41	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.17.19 14.41	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.17.19 14.41	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.17.19 14.41	U	1
% Recovery							
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		101	%	70-130	09.17.19 14.41	
4-Bromofluorobenzene	460-00-4		120	%	70-130	09.17.19 14.41	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH18A**
Lab Sample Id: 636970-004

Matrix: Soil
Date Collected: 09.13.19 11.00

Date Received: 09.16.19 12.40
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3101735

Date Prep: 09.17.19 12.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	69.5	5.03	mg/kg	09.17.19 13.29		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101746

Date Prep: 09.17.19 11.02

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.17.19 16.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	09.17.19 16.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	09.17.19 16.40	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	09.17.19 16.40	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	09.17.19 16.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	09.17.19 16.40	
o-Terphenyl	84-15-1	125	%	70-135	09.17.19 16.40	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH18A**
Lab Sample Id: 636970-004

Matrix: Soil
Date Collected: 09.13.19 11.00

Date Received: 09.16.19 12.40
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101779

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.17.19 15.01	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.17.19 15.01	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.17.19 15.01	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.17.19 15.01	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.17.19 15.01	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.17.19 15.01	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.17.19 15.01	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114		%	70-130	09.17.19 15.01	
1,4-Difluorobenzene	540-36-3	94		%	70-130	09.17.19 15.01	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH19**
Lab Sample Id: 636970-005

Matrix: Soil
Date Collected: 09.13.19 11.20

Date Received: 09.16.19 12.40
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3101735

Date Prep: 09.17.19 12.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	93.0	25.3	mg/kg	09.17.19 14.03		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101746

Date Prep: 09.17.19 11.02

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.17.19 17.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.17.19 17.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.17.19 17.02	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	09.17.19 17.02	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.17.19 17.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	09.17.19 17.02	
o-Terphenyl	84-15-1	118	%	70-135	09.17.19 17.02	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH19**
Lab Sample Id: 636970-005

Matrix: Soil
Date Collected: 09.13.19 11.20

Date Received: 09.16.19 12.40
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101779

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.17.19 15.21	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.17.19 15.21	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.17.19 15.21	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.17.19 15.21	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.17.19 15.21	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.17.19 15.21	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.17.19 15.21	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		110	%	70-130	09.17.19 15.21	
1,4-Difluorobenzene	540-36-3		95	%	70-130	09.17.19 15.21	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH19A** Matrix: Soil Date Received: 09.16.19 12.40
 Lab Sample Id: 636970-006 Date Collected: 09.13.19 11.25 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 09.17.19 12.50 Basis: Wet Weight
 Seq Number: 3101735 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	47.6	4.96	mg/kg	09.17.19 16.12		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.17.19 11.02 Basis: Wet Weight
 Seq Number: 3101746 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.17.19 17.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.17.19 17.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.17.19 17.23	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	09.17.19 17.23	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.17.19 17.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	09.17.19 17.23	
o-Terphenyl	84-15-1	112	%	70-135	09.17.19 17.23	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH19A**
Lab Sample Id: 636970-006

Matrix: Soil
Date Collected: 09.13.19 11.25

Date Received: 09.16.19 12.40
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101779

Date Prep: 09.17.19 11.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.17.19 15.41	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.17.19 15.41	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.17.19 15.41	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.17.19 15.41	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.17.19 15.41	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.17.19 15.41	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.17.19 15.41	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		91	%	70-130	09.17.19 15.41	
4-Bromofluorobenzene	460-00-4		111	%	70-130	09.17.19 15.41	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH20**
Lab Sample Id: 636970-007

Matrix: Soil
Date Collected: 09.13.19 11.40

Date Received: 09.16.19 12.40
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3101735

Date Prep: 09.17.19 12.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	258	25.1	mg/kg	09.17.19 14.27		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101746

Date Prep: 09.17.19 11.02

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	09.17.19 17.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	282	49.8	mg/kg	09.17.19 17.44		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	09.17.19 17.44	U	1
Total GRO-DRO	PHC628	282	49.8	mg/kg	09.17.19 17.44		1
Total TPH	PHC635	282	49.8	mg/kg	09.17.19 17.44		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	09.17.19 17.44	
o-Terphenyl	84-15-1	118	%	70-135	09.17.19 17.44	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH20**
Lab Sample Id: 636970-007

Matrix: Soil
Date Collected: 09.13.19 11.40

Date Received: 09.16.19 12.40
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101779

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.17.19 16.02	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.17.19 16.02	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.17.19 16.02	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.17.19 16.02	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.17.19 16.02	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.17.19 16.02	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.17.19 16.02	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		113	%	70-130	09.17.19 16.02	
1,4-Difluorobenzene	540-36-3		100	%	70-130	09.17.19 16.02	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH20A**
Lab Sample Id: 636970-008

Matrix: Soil
Date Collected: 09.13.19 11.45

Date Received: 09.16.19 12.40
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3101735

Date Prep: 09.17.19 12.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	175	25.0	mg/kg	09.17.19 14.33		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101746

Date Prep: 09.17.19 11.02

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.17.19 18.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	09.17.19 18.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	09.17.19 18.06	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	09.17.19 18.06	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	09.17.19 18.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	09.17.19 18.06	
o-Terphenyl	84-15-1	113	%	70-135	09.17.19 18.06	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH20A**
Lab Sample Id: 636970-008

Matrix: Soil
Date Collected: 09.13.19 11.45

Date Received: 09.16.19 12.40
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101779

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	09.17.19 16.22	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.17.19 16.22	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.17.19 16.22	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	09.17.19 16.22	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	09.17.19 16.22	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	09.17.19 16.22	U	1
Total BTEX		<0.00198	0.00198	mg/kg	09.17.19 16.22	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		100	%	70-130	09.17.19 16.22	
4-Bromofluorobenzene	460-00-4		111	%	70-130	09.17.19 16.22	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH21**
Lab Sample Id: 636970-009

Matrix: Soil
Date Collected: 09.13.19 12.45

Date Received: 09.16.19 12.40
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3101735

Date Prep: 09.17.19 12.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	330	25.0	mg/kg	09.17.19 14.38		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101746

Date Prep: 09.17.19 11.02

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.17.19 18.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.17.19 18.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.17.19 18.27	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	09.17.19 18.27	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.17.19 18.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	09.17.19 18.27	
o-Terphenyl	84-15-1	119	%	70-135	09.17.19 18.27	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH21**
Lab Sample Id: 636970-009

Matrix: Soil
Date Collected: 09.13.19 12.45

Date Received: 09.16.19 12.40
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101779

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.17.19 16.42	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.17.19 16.42	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.17.19 16.42	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.17.19 16.42	U	1
o-Xylene	95-47-6	0.00563	0.00200	mg/kg	09.17.19 16.42		1
Total Xylenes	1330-20-7	0.00563	0.00200	mg/kg	09.17.19 16.42		1
Total BTEX		0.00563	0.00200	mg/kg	09.17.19 16.42		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	113	%	70-130	09.17.19 16.42		
1,4-Difluorobenzene	540-36-3	99	%	70-130	09.17.19 16.42		



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH21A**
Lab Sample Id: 636970-010

Matrix: Soil
Date Collected: 09.13.19 12.50

Date Received: 09.16.19 12.40
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3101735

Date Prep: 09.17.19 12.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	298	50.0	mg/kg	09.17.19 14.44		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101746

Date Prep: 09.17.19 11.02

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.17.19 18.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	95.2	49.9	mg/kg	09.17.19 18.49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	09.17.19 18.49	U	1
Total GRO-DRO	PHC628	95.2	49.9	mg/kg	09.17.19 18.49		1
Total TPH	PHC635	95.2	49.9	mg/kg	09.17.19 18.49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	09.17.19 18.49	
o-Terphenyl	84-15-1	112	%	70-135	09.17.19 18.49	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH21A**
Lab Sample Id: 636970-010

Matrix: Soil
Date Collected: 09.13.19 12.50

Date Received: 09.16.19 12.40
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101779

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.17.19 17.02	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.17.19 17.02	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.17.19 17.02	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	09.17.19 17.02	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.17.19 17.02	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.17.19 17.02	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.17.19 17.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	09.17.19 17.02		
4-Bromofluorobenzene	460-00-4	109	%	70-130	09.17.19 17.02		



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH22**
Lab Sample Id: 636970-011

Matrix: Soil
Date Collected: 09.13.19 13.15

Date Received: 09.16.19 12.40
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3101735

Date Prep: 09.17.19 12.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	103	50.4	mg/kg	09.17.19 15.08		10

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101746

Date Prep: 09.17.19 11.02

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.17.19 19.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.17.19 19.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.17.19 19.32	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	09.17.19 19.32	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.17.19 19.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	09.17.19 19.32	
o-Terphenyl	84-15-1	113	%	70-135	09.17.19 19.32	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH22**
Lab Sample Id: 636970-011

Matrix: Soil
Date Collected: 09.13.19 13.15

Date Received: 09.16.19 12.40
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101779

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.17.19 18.20	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.17.19 18.20	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.17.19 18.20	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	09.17.19 18.20	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.17.19 18.20	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.17.19 18.20	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.17.19 18.20	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108		%	70-130	09.17.19 18.20	
1,4-Difluorobenzene	540-36-3	94		%	70-130	09.17.19 18.20	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH22A** Matrix: Soil Date Received: 09.16.19 12.40
 Lab Sample Id: 636970-012 Date Collected: 09.13.19 13.20 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 09.17.19 12.50 Basis: Wet Weight
 Seq Number: 3101735 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	43.5	4.97	mg/kg	09.17.19 16.17		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.17.19 11.02 Basis: Wet Weight
 Seq Number: 3101746 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.17.19 19.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	09.17.19 19.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	09.17.19 19.54	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	09.17.19 19.54	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	09.17.19 19.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	09.17.19 19.54	
o-Terphenyl	84-15-1	116	%	70-135	09.17.19 19.54	



Certificate of Analytical Results 636970

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **PH22A**
Lab Sample Id: 636970-012

Matrix: Soil
Date Collected: 09.13.19 13.20

Date Received: 09.16.19 12.40
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101779

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.30

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.17.19 18.40	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.17.19 18.40	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.17.19 18.40	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	09.17.19 18.40	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.17.19 18.40	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.17.19 18.40	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.17.19 18.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	09.17.19 18.40		
1,4-Difluorobenzene	540-36-3	97	%	70-130	09.17.19 18.40		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 Obs Well #1

Analytical Method: Chloride by EPA 300

Seq Number: 3101735

MB Sample Id: 7686338-1-BLK

Matrix: Solid

LCS Sample Id: 7686338-1-BKS

Prep Method: E300P

Date Prep: 09.17.19

LCSD Sample Id: 7686338-1-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	258	103	256	102	90-110	1	20	mg/kg	09.17.19 13:17	

Analytical Method: Chloride by EPA 300

Seq Number: 3101735

Parent Sample Id: 636970-004

Matrix: Soil

MS Sample Id: 636970-004 S

Prep Method: E300P

Date Prep: 09.17.19

MSD Sample Id: 636970-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	69.5	252	313	97	316	98	90-110	1	20	mg/kg	09.17.19 13:34	

Analytical Method: Chloride by EPA 300

Seq Number: 3101735

Parent Sample Id: 637059-007

Matrix: Soil

MS Sample Id: 637059-007 S

Prep Method: E300P

Date Prep: 09.17.19

MSD Sample Id: 637059-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.01	251	261	104	260	104	90-110	0	20	mg/kg	09.17.19 14:56	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3101746

MB Sample Id: 7686310-1-BLK

Matrix: Solid

LCS Sample Id: 7686310-1-BKS

Prep Method: SW8015P

Date Prep: 09.17.19

LCSD Sample Id: 7686310-1-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	1050	105	70-135	3	20	mg/kg	09.17.19 11:48	
Diesel Range Organics (DRO)	<15.0	1000	973	97	1020	102	70-135	5	20	mg/kg	09.17.19 11:48	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		118		123		70-135	%	09.17.19 11:48
o-Terphenyl	103		112		118		70-135	%	09.17.19 11:48

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

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

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

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



LT Environmental, Inc.

Remuda 25 Obs Well #1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3101746

Parent Sample Id: 636970-001

Matrix: Soil

MS Sample Id: 636970-001 S

Prep Method: SW8015P

Date Prep: 09.17.19

MSD Sample Id: 636970-001 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)	40.0	999	1080	104	1020	98	70-135	6	20	mg/kg	09.17.19 12:52	
Diesel Range Organics (DRO)	1070	999	2020	95	2010	94	70-135	0	20	mg/kg	09.17.19 12:52	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		122		70-135	%	09.17.19 12:52
o-Terphenyl	102		102		70-135	%	09.17.19 12:52

Analytical Method: BTEX by EPA 8021B

Seq Number: 3101779

MB Sample Id: 7686306-1-BLK

Matrix: Solid

LCS Sample Id: 7686306-1-BKS

Prep Method: SW5030B

Date Prep: 09.17.19

LCSD Sample Id: 7686306-1-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	0.100	0.101	101	0.104	104	70-130	3	35	mg/kg	09.17.19 10:35	
Toluene	<0.00200	0.100	0.101	101	0.102	102	70-130	1	35	mg/kg	09.17.19 10:35	
Ethylbenzene	<0.00200	0.100	0.109	109	0.107	107	70-130	2	35	mg/kg	09.17.19 10:35	
m,p-Xylenes	<0.00400	0.200	0.214	107	0.207	104	70-130	3	35	mg/kg	09.17.19 10:35	
o-Xylene	<0.00200	0.100	0.110	110	0.107	107	70-130	3	35	mg/kg	09.17.19 10:35	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		97		100		70-130	%	09.17.19 10:35
4-Bromofluorobenzene	103		108		108		70-130	%	09.17.19 10:35

Analytical Method: BTEX by EPA 8021B

Seq Number: 3101779

Parent Sample Id: 636970-001

Matrix: Soil

MS Sample Id: 636970-001 S

Prep Method: SW5030B

Date Prep: 09.17.19

MSD Sample Id: 636970-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0202	20	0.106	106	70-130	136	35	mg/kg	09.17.19 12:41	XF
Toluene	<0.000454	0.0996	0.0270	27	0.108	108	70-130	120	35	mg/kg	09.17.19 12:41	XF
Ethylbenzene	<0.00199	0.0996	0.0315	32	0.113	113	70-130	113	35	mg/kg	09.17.19 12:41	XF
m,p-Xylenes	0.0292	0.199	0.122	47	0.266	118	70-130	74	35	mg/kg	09.17.19 12:41	XF
o-Xylene	0.0165	0.0996	0.0779	62	0.144	128	70-130	60	35	mg/kg	09.17.19 12:41	XF

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	85		100		70-130	%	09.17.19 12:41
4-Bromofluorobenzene	133	**	129		70-130	%	09.17.19 12:41

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) 802-0300 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 (480-305-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-520-2000)

Chain of Custody

Work Order No: 10310740

www.xenco.com

Page 1 of 2

Project Manager:	Dan Moir	Cell 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:	dmoir@ltenv.com mcafee@ltenv.com

Project Name:	Remuda 25 Ops Well #1	Turn Around	
Project Number:		Routine	☐
P.O. Number:	ZRP-5309	Run:	4 days
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒
	Temperature (°C):	3.8	Thermometer ID	TNM007
	Received intact:	Yes ☒ No ☐	Correction Factor	-0.2
	Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:	12

09:44 PM

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8016)	BTEX (EPA 8-8021)	Chloride (EPA 300.0)	Sample Comments									
PH17	S	09/13/19	10:20	1'	1	X	Y	X	discrete									
PH17A			10:40	3'		X	Y	Y										
PH18			10:55	1'		X	Y	Y										
PH18A			11:00	2'		X	X	Y										
PH19			11:20	1'		X	X	X										
PH19A			11:25	2'		X	X	X										
PH20			11:40	1'		X	X	Y										
PH20A			11:45	2'		X	X	X										
PH21			12:45	1'		X	X	X										
PH21A			12:50	2'		X	X	X										

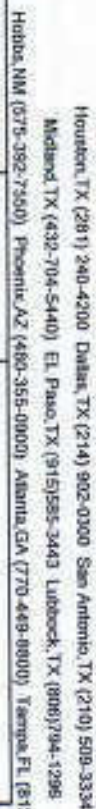
Total 200.7 / 6010 200.8 / 6020:

Circle Method(s) and Metal(s) to be analyzed

8RCRA 13PPM Texas 11 A 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 \$5 for each sample submitted to Xenco, but not analyzed. Those terms will be endorsed unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>Bob Mair</i>	<i>Conto</i>	9/16/19 12:40			



Work Order No:

636970

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)794-1295

Hobbs, NM (505-382-7350) Phoenix, AZ (480-355-0000) Atlanta, GA (770-449-0000) Tampa, FL (813-520-2000)

www.xenoco.com

Page 01

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

[illegible]

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

Number of Containers

(EPA 8015)

(EPA 0=8021)

de (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 (E)	BTEX	Chloride	Sample Comments
PH22	S	09/18/19	1315	1'	1	X	X	X	discrete
PH22A	S	09/19/19	1320	2'	1	X	X	X	discrete

Total	200.7 / 6010	200.8 / 6020:

Circle Method(s) and Metal(s) to be analyzed

8RCRA 13PPM Teams 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 Z
 TCLP / SPLP 6010- 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
 1631 / 245.1 / 7470 / 774

1631 / 245.1 / 1410 / 1411 - mg

Site: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xantec. It assigns standard terms and conditions of service. Xantec 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 Xantec. A minimum charge of \$15,000 will be applied to each project and a charge of \$5 for each sample submitted to Xantec, 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>	9/16/19 12:40			

Revised Date 03/14/18 Rev. 2018



Inter-Office Shipment

Page 1 of 2

IOS Number **48048**

Date/Time: 09/16/19 14:53

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
636970-001	S	PH17	09/13/19 10:20	E300_CL	Chloride by EPA 300	09/19/19	03/11/20	JKR	CL	
636970-001	S	PH17	09/13/19 10:20	SW8021B	BTEX by EPA 8021B	09/19/19	09/27/19	JKR	BR4FBZ BZ BZME EBZ X	
636970-001	S	PH17	09/13/19 10:20	SW8015MOD_NM	TPH by SW8015 Mod	09/19/19	09/27/19	JKR	GRO-DRO PHCC10C28 PF	
636970-002	S	PH17A	09/13/19 10:40	SW8015MOD_NM	TPH by SW8015 Mod	09/19/19	09/27/19	JKR	GRO-DRO PHCC10C28 PF	
636970-002	S	PH17A	09/13/19 10:40	SW8021B	BTEX by EPA 8021B	09/19/19	09/27/19	JKR	BR4FBZ BZ BZME EBZ X	
636970-002	S	PH17A	09/13/19 10:40	E300_CL	Chloride by EPA 300	09/19/19	03/11/20	JKR	CL	
636970-003	S	PH18	09/13/19 10:55	SW8021B	BTEX by EPA 8021B	09/19/19	09/27/19	JKR	BR4FBZ BZ BZME EBZ X	
636970-003	S	PH18	09/13/19 10:55	SW8015MOD_NM	TPH by SW8015 Mod	09/19/19	09/27/19	JKR	GRO-DRO PHCC10C28 PF	
636970-003	S	PH18	09/13/19 10:55	E300_CL	Chloride by EPA 300	09/19/19	03/11/20	JKR	CL	
636970-004	S	PH18A	09/13/19 11:00	SW8021B	BTEX by EPA 8021B	09/19/19	09/27/19	JKR	BR4FBZ BZ BZME EBZ X	
636970-004	S	PH18A	09/13/19 11:00	SW8015MOD_NM	TPH by SW8015 Mod	09/19/19	09/27/19	JKR	GRO-DRO PHCC10C28 PF	
636970-004	S	PH18A	09/13/19 11:00	E300_CL	Chloride by EPA 300	09/19/19	03/11/20	JKR	CL	
636970-005	S	PH19	09/13/19 11:20	SW8021B	BTEX by EPA 8021B	09/19/19	09/27/19	JKR	BR4FBZ BZ BZME EBZ X	
636970-005	S	PH19	09/13/19 11:20	SW8015MOD_NM	TPH by SW8015 Mod	09/19/19	09/27/19	JKR	GRO-DRO PHCC10C28 PF	
636970-005	S	PH19	09/13/19 11:20	E300_CL	Chloride by EPA 300	09/19/19	03/11/20	JKR	CL	
636970-006	S	PH19A	09/13/19 11:25	SW8021B	BTEX by EPA 8021B	09/19/19	09/27/19	JKR	BR4FBZ BZ BZME EBZ X	
636970-006	S	PH19A	09/13/19 11:25	SW8015MOD_NM	TPH by SW8015 Mod	09/19/19	09/27/19	JKR	GRO-DRO PHCC10C28 PF	
636970-006	S	PH19A	09/13/19 11:25	E300_CL	Chloride by EPA 300	09/19/19	03/11/20	JKR	CL	
636970-007	S	PH20	09/13/19 11:40	E300_CL	Chloride by EPA 300	09/19/19	03/11/20	JKR	CL	
636970-007	S	PH20	09/13/19 11:40	SW8021B	BTEX by EPA 8021B	09/19/19	09/27/19	JKR	BR4FBZ BZ BZME EBZ X	
636970-007	S	PH20	09/13/19 11:40	SW8015MOD_NM	TPH by SW8015 Mod	09/19/19	09/27/19	JKR	GRO-DRO PHCC10C28 PF	
636970-008	S	PH20A	09/13/19 11:45	SW8015MOD_NM	TPH by SW8015 Mod	09/19/19	09/27/19	JKR	GRO-DRO PHCC10C28 PF	
636970-008	S	PH20A	09/13/19 11:45	SW8021B	BTEX by EPA 8021B	09/19/19	09/27/19	JKR	BR4FBZ BZ BZME EBZ X	
636970-008	S	PH20A	09/13/19 11:45	E300_CL	Chloride by EPA 300	09/19/19	03/11/20	JKR	CL	
636970-009	S	PH21	09/13/19 12:45	SW8015MOD_NM	TPH by SW8015 Mod	09/19/19	09/27/19	JKR	GRO-DRO PHCC10C28 PF	



Inter-Office Shipment

Page 2 of 2

IOS Number **48048**

Date/Time: 09/16/19 14:53

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
636970-009	S	PH21	09/13/19 12:45	SW8021B	BTEX by EPA 8021B	09/19/19	09/27/19	JKR	BR4FBZ BZ BZME EBZ X	
636970-009	S	PH21	09/13/19 12:45	E300_CL	Chloride by EPA 300	09/19/19	03/11/20	JKR	CL	
636970-010	S	PH21A	09/13/19 12:50	SW8021B	BTEX by EPA 8021B	09/19/19	09/27/19	JKR	BR4FBZ BZ BZME EBZ X	
636970-010	S	PH21A	09/13/19 12:50	E300_CL	Chloride by EPA 300	09/19/19	03/11/20	JKR	CL	
636970-010	S	PH21A	09/13/19 12:50	SW8015MOD_NM	TPH by SW8015 Mod	09/19/19	09/27/19	JKR	GRO-DRO PHCC10C28 PF	
636970-011	S	PH22	09/13/19 13:15	SW8021B	BTEX by EPA 8021B	09/19/19	09/27/19	JKR	BR4FBZ BZ BZME EBZ X	
636970-011	S	PH22	09/13/19 13:15	E300_CL	Chloride by EPA 300	09/19/19	03/11/20	JKR	CL	
636970-011	S	PH22	09/13/19 13:15	SW8015MOD_NM	TPH by SW8015 Mod	09/19/19	09/27/19	JKR	GRO-DRO PHCC10C28 PF	
636970-012	S	PH22A	09/13/19 13:20	SW8015MOD_NM	TPH by SW8015 Mod	09/19/19	09/27/19	JKR	GRO-DRO PHCC10C28 PF	
636970-012	S	PH22A	09/13/19 13:20	E300_CL	Chloride by EPA 300	09/19/19	03/11/20	JKR	CL	
636970-012	S	PH22A	09/13/19 13:20	SW8021B	BTEX by EPA 8021B	09/19/19	09/27/19	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Relinquished By:

Elizabeth McClellan

Received By: _____

Date Relinquished: 09/16/2019

Date Received: _____

Cooler Temperature: _____



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 48048

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 09/16/2019 02:53 PM

Received By:

Date Received:

Sample Receipt Checklist

Comments

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: _____

Date: _____



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 09/16/2019 12:40:00 PM

Work Order #: 636970

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.8	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?	Yes	
#6 *Custody Seals Signed and dated?	Yes	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	Yes	Subbed to Midland
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 09/16/2019

Checklist reviewed by:

Jessica Kramer

Date: 09/17/2019

Analytical Report 637191

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Obs Well #001

20-SEP-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

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

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



20-SEP-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **637191**

Remuda Obs Well #001

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 637191. 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. 637191 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW35	S	09-17-19 11:45	0 - 2 ft	637191-001
SW36	S	09-17-19 11:40	0 - 2 ft	637191-002
SW37	S	09-17-19 10:50	0 - 4 ft	637191-003
SW38	S	09-17-19 10:45	0 - 4 ft	637191-004
SW39	S	09-17-19 11:00	0 - 4 ft	637191-005
SW40	S	09-17-19 10:55	0 - 4 ft	637191-006
SW41	S	09-17-19 11:50	0 - 2 ft	637191-007
SW42	S	09-17-19 12:00	0 - 4 ft	637191-008
SW43	S	09-17-19 12:05	0 - 4 ft	637191-009
SW44	S	09-17-19 12:30	0 - 4 ft	637191-010
SW45	S	09-17-19 12:25	0 - 4 ft	637191-011
FS08A	S	09-17-19 12:35	4 ft	637191-012
FS82	S	09-17-19 13:05	6 ft	637191-013
FS84	S	09-17-19 13:15	3 ft	637191-014
FS85	S	09-17-19 13:20	3 ft	637191-015
SW46	S	09-17-19 13:25	0 - 3 ft	637191-016
SS47	S	09-17-19 13:30	0 - 3 ft	637191-017
SS04	S	09-17-19 12:40	0.5 ft	637191-018
SS05	S	09-17-19 12:45	0.5 ft	637191-019
SS06	S	09-17-19 12:50	0.5 ft	637191-020
SS07	S	09-17-19 12:55	0.5 ft	637191-021
SS08	S	09-17-19 13:00	0.5 ft	637191-022

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: Remuda Obs Well #001**Project ID:
Work Order Number(s): 637191Report Date: 20-SEP-19
Date Received: 09/17/2019**Sample receipt non conformances and comments:**

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3101898 Chloride by EPA 300

Lab Sample ID 637191-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 637191-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019.

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

Batch: LBA-3101952 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7686458-1-BLK, 637191-001 S, 637191-001 SD, 637191-007, 637191-020.

Batch: LBA-3101957 BTEX by EPA 8021B

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

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 637191-004.

Batch: LBA-3101958 BTEX by EPA 8021B

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

Batch: LBA-3102031 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7686459-1-BSD, 637191-021 S.



Certificate of Analysis Summary 637191

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Obs Well #001

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Sep-17-19 04:55 pm

Report Date: 20-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	637191-001	637191-002	637191-003	637191-004	637191-005	637191-006
	<i>Field Id:</i>	SW35	SW36	SW37	SW38	SW39	SW40
	<i>Depth:</i>	0-2 ft	0-2 ft	0-4 ft	0-4 ft	0-4 ft	0-4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-17-19 11:45	Sep-17-19 11:40	Sep-17-19 10:50	Sep-17-19 10:45	Sep-17-19 11:00	Sep-17-19 10:55
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-18-19 12:00	Sep-18-19 12:00	Sep-18-19 12:00	Sep-18-19 12:00	Sep-18-19 12:00	Sep-18-19 12:00
	<i>Analyzed:</i>	Sep-18-19 16:48	Sep-18-19 18:08	Sep-18-19 18:27	Sep-18-19 18:47	Sep-18-19 19:07	Sep-18-19 19:27
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100
Toluene		<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	0.00316 0.000992	<0.00101 0.00101	<0.00100 0.00100
Ethylbenzene		<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	0.0175 0.000992	<0.00101 0.00101	<0.00100 0.00100
m,p-Xylenes		<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	0.140 0.00198	<0.00202 0.00202	<0.00201 0.00201
o-Xylene		<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	0.0575 0.000992	<0.00101 0.00101	<0.00100 0.00100
Total Xylenes		<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	0.198 0.000992	<0.00101 0.00101	<0.00100 0.00100
Total BTEX		<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	0.218 0.000992	<0.00101 0.00101	<0.00100 0.00100
Chloride by EPA 300	<i>Extracted:</i>	Sep-18-19 12:09	Sep-18-19 12:09	Sep-18-19 12:09	Sep-18-19 12:09	Sep-18-19 12:09	Sep-18-19 12:09
	<i>Analyzed:</i>	Sep-18-19 14:53	Sep-18-19 15:13	Sep-18-19 15:19	Sep-18-19 15:26	Sep-18-19 15:32	Sep-18-19 16:14
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		46.2 9.92	556 50.1	656 20.1	556 20.1	1030 50.4	551 10.0
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-18-19 11:00	Sep-18-19 11:00	Sep-18-19 11:00	Sep-18-19 11:00	Sep-18-19 11:00	Sep-18-19 11:00
	<i>Analyzed:</i>	Sep-18-19 14:09	Sep-18-19 15:12	Sep-18-19 15:33	Sep-20-19 09:58	Sep-18-19 16:15	Sep-18-19 16:36
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.1 50.1	<50.3 50.3	95.9 50.0	<50.2 50.2	<50.1 50.1
Diesel Range Organics (DRO)		<50.3 50.3	<50.1 50.1	<50.3 50.3	1160 50.0	<50.2 50.2	<50.1 50.1
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.1 50.1	<50.3 50.3	<50.0 50.0	<50.2 50.2	<50.1 50.1
Total GRO-DRO		<50.3 50.3	<50.1 50.1	<50.3 50.3	1260 50.0	<50.2 50.2	<50.1 50.1
Total TPH		<50.3 50.3	<50.1 50.1	<50.3 50.3	1260 50.0	<50.2 50.2	<50.1 50.1

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

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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 637191

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Obs Well #001

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Sep-17-19 04:55 pm

Report Date: 20-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	637191-007	637191-008	637191-009	637191-010	637191-011	637191-012
	<i>Field Id:</i>	SW41	SW42	SW43	SW44	SW45	FS08A
	<i>Depth:</i>	0-2 ft	0-4 ft	0-4 ft	0-4 ft	0-4 ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-17-19 11:50	Sep-17-19 12:00	Sep-17-19 12:05	Sep-17-19 12:30	Sep-17-19 12:25	Sep-17-19 12:35
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-18-19 12:00	Sep-18-19 12:00	Sep-18-19 12:00	Sep-18-19 12:00	Sep-18-19 12:00	Sep-18-19 12:00
	<i>Analyzed:</i>	Sep-18-19 19:46	Sep-18-19 20:06	Sep-18-19 20:26	Sep-18-19 20:45	Sep-18-19 21:44	Sep-18-19 22:04
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00098 0.00098	<0.00096 0.00096	<0.00096 0.00096
Toluene		<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00098 0.00098	<0.00096 0.00096	<0.00096 0.00096
Ethylbenzene		<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00098 0.00098	<0.00096 0.00096	<0.00096 0.00096
m,p-Xylenes		<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
o-Xylene		<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00098 0.00098	<0.00096 0.00096	<0.00096 0.00096
Total Xylenes		<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00098 0.00098	<0.00096 0.00096	<0.00096 0.00096
Total BTEX		<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00098 0.00098	<0.00096 0.00096	<0.00096 0.00096
Chloride by EPA 300	<i>Extracted:</i>	Sep-18-19 12:09	Sep-18-19 12:09	Sep-18-19 12:09	Sep-18-19 12:09	Sep-18-19 12:09	Sep-18-19 12:09
	<i>Analyzed:</i>	Sep-18-19 16:21	Sep-18-19 16:27	Sep-18-19 16:41	Sep-18-19 16:47	Sep-18-19 16:54	Sep-18-19 17:13
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		19.8 10.1	264 9.98	84.1 9.96	30.6 9.94	208 10.0	1120 49.5
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-18-19 11:00	Sep-18-19 11:00	Sep-18-19 11:00	Sep-18-19 11:00	Sep-18-19 11:00	Sep-18-19 11:00
	<i>Analyzed:</i>	Sep-18-19 16:57	Sep-19-19 09:30	Sep-19-19 10:11	Sep-19-19 10:32	Sep-19-19 11:13	Sep-19-19 11:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<49.8 49.8	<49.8 49.8	<50.1 50.1	<50.2 50.2	<50.0 50.0
Diesel Range Organics (DRO)		<50.1 50.1	<49.8 49.8	<49.8 49.8	<50.1 50.1	<50.2 50.2	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<49.8 49.8	<49.8 49.8	<50.1 50.1	<50.2 50.2	<50.0 50.0
Total GRO-DRO		<50.1 50.1	<49.8 49.8	<49.8 49.8	<50.1 50.1	<50.2 50.2	<50.0 50.0
Total TPH		<50.1 50.1	<49.8 49.8	<49.8 49.8	<50.1 50.1	<50.2 50.2	<50.0 50.0

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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 637191

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Obs Well #001

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Sep-17-19 04:55 pm

Report Date: 20-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	637191-013	637191-014	637191-015	637191-016	637191-017	637191-018
	<i>Field Id:</i>	FS82	FS84	FS85	SW46	SS47	SS04
	<i>Depth:</i>	6- ft	3- ft	3- ft	0-3 ft	0-3 ft	0.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-17-19 13:05	Sep-17-19 13:15	Sep-17-19 13:20	Sep-17-19 13:25	Sep-17-19 13:30	Sep-17-19 12:40
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-18-19 12:00	Sep-18-19 12:00	Sep-18-19 12:00	Sep-18-19 12:00	Sep-18-19 12:00	Sep-18-19 12:00
	<i>Analyzed:</i>	Sep-18-19 22:23	Sep-18-19 22:43	Sep-18-19 23:03	Sep-18-19 23:22	Sep-18-19 23:42	Sep-19-19 00:02
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Toluene		<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Ethylbenzene		<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
m,p-Xylenes		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202
o-Xylene		<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Total Xylenes		<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Total BTEX		<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Chloride by EPA 300	<i>Extracted:</i>	Sep-18-19 12:09	Sep-18-19 12:09	Sep-18-19 12:09	Sep-18-19 12:09	Sep-18-19 12:09	Sep-18-19 12:09
	<i>Analyzed:</i>	Sep-18-19 17:26	Sep-18-19 17:46	Sep-18-19 17:52	Sep-18-19 17:58	Sep-18-19 18:05	Sep-18-19 18:11
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		25.5 9.92	20.7 9.90	42.4 10.1	16.1 9.94	17.6 10.1	<9.94 9.94
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-18-19 11:00	Sep-18-19 11:00	Sep-18-19 11:00	Sep-18-19 11:00	Sep-18-19 11:00	Sep-18-19 11:00
	<i>Analyzed:</i>	Sep-19-19 11:54	Sep-19-19 12:15	Sep-19-19 12:35	Sep-19-19 12:56	Sep-19-19 13:17	Sep-19-19 13:37
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.3 50.3	<50.1 50.1	<50.2 50.2	<50.1 50.1	<49.9 49.9
Diesel Range Organics (DRO)		117 50.3	<50.3 50.3	59.6 50.1	<50.2 50.2	147 50.1	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.3 50.3	<50.1 50.1	<50.2 50.2	<50.1 50.1	<49.9 49.9
Total GRO-DRO		117 50.3	<50.3 50.3	59.6 50.1	<50.2 50.2	147 50.1	<49.9 49.9
Total TPH		117 50.3	<50.3 50.3	59.6 50.1	<50.2 50.2	147 50.1	<49.9 49.9

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

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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 637191

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Obs Well #001

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Sep-17-19 04:55 pm

Report Date: 20-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	637191-019	637191-020	637191-021	637191-022		
	<i>Field Id:</i>	SS05	SS06	SS07	SS08		
	<i>Depth:</i>	0.5- ft	0.5- ft	0.5- ft	0.5- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Sep-17-19 12:45	Sep-17-19 12:50	Sep-17-19 12:55	Sep-17-19 13:00		
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-18-19 12:00	Sep-18-19 12:00	Sep-18-19 16:09	Sep-18-19 16:09		
	<i>Analyzed:</i>	Sep-19-19 00:22	Sep-19-19 00:41	Sep-19-19 02:59	Sep-19-19 04:17		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100		
Toluene		<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100		
Ethylbenzene		<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100		
m,p-Xylenes		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201		
o-Xylene		<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100		
Total Xylenes		<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100		
Total BTEX		<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100		
Chloride by EPA 300	<i>Extracted:</i>	Sep-18-19 12:09	Sep-18-19 13:09	Sep-18-19 13:09	Sep-18-19 13:09		
	<i>Analyzed:</i>	Sep-18-19 18:18	Sep-18-19 19:03	Sep-18-19 19:22	Sep-18-19 19:29		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		10.9 9.92	<10.0 10.0	<9.98 9.98	<9.86 9.86		
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-18-19 11:00	Sep-18-19 11:00	Sep-18-19 16:45	Sep-18-19 16:45		
	<i>Analyzed:</i>	Sep-19-19 13:58	Sep-19-19 14:19	Sep-19-19 16:26	Sep-19-19 17:29		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0	<49.8 49.8	<50.2 50.2		
Diesel Range Organics (DRO)		<50.0 50.0	75.6 50.0	<49.8 49.8	<50.2 50.2		
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<49.8 49.8	<50.2 50.2		
Total GRO-DRO		<50.0 50.0	75.6 50.0	<49.8 49.8	<50.2 50.2		
Total TPH		<50.0 50.0	75.6 50.0	<49.8 49.8	<50.2 50.2		

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

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

Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW35**
Lab Sample Id: 637191-001

Matrix: Soil
Date Collected: 09.17.19 11.45

Date Received: 09.17.19 16.55
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101898

Date Prep: 09.18.19 12.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	46.2	9.92	mg/kg	09.18.19 14.53		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101952

Date Prep: 09.18.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	09.18.19 14.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	09.18.19 14.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	09.18.19 14.09	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	09.18.19 14.09	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	09.18.19 14.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	134	%	70-135	09.18.19 14.09	
o-Terphenyl	84-15-1	108	%	70-135	09.18.19 14.09	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW35**
Lab Sample Id: 637191-001

Matrix: Soil
Date Collected: 09.17.19 11.45

Date Received: 09.17.19 16.55
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.18.19 12.00

Basis: Wet Weight

Seq Number: 3101957

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.18.19 16.48	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.18.19 16.48	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.18.19 16.48	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.18.19 16.48	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.18.19 16.48	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.18.19 16.48	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.18.19 16.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	09.18.19 16.48		
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.18.19 16.48		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW36** Matrix: Soil Date Received: 09.17.19 16.55
 Lab Sample Id: 637191-002 Date Collected: 09.17.19 11.40 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.18.19 12.09 Basis: Wet Weight
 Seq Number: 3101898

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	556	50.1	mg/kg	09.18.19 15.13		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.18.19 11.00 Basis: Wet Weight
 Seq Number: 3101952

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	09.18.19 15.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	09.18.19 15.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	09.18.19 15.12	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	09.18.19 15.12	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	09.18.19 15.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	133	%	70-135	09.18.19 15.12	
o-Terphenyl	84-15-1	111	%	70-135	09.18.19 15.12	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW36**
Lab Sample Id: 637191-002

Matrix: Soil
Date Collected: 09.17.19 11.40

Date Received: 09.17.19 16.55
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: DTH

Analyst: DTH

Seq Number: 3101957

Date Prep: 09.18.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.18.19 18.08	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.18.19 18.08	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.18.19 18.08	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.18.19 18.08	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.18.19 18.08	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.18.19 18.08	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.18.19 18.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	09.18.19 18.08		
1,4-Difluorobenzene	540-36-3	106	%	70-130	09.18.19 18.08		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW37**
Lab Sample Id: 637191-003

Matrix: Soil
Date Collected: 09.17.19 10.50

Date Received: 09.17.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101898

Date Prep: 09.18.19 12.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	656	20.1	mg/kg	09.18.19 15.19		2

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101952

Date Prep: 09.18.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	09.18.19 15.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	09.18.19 15.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	09.18.19 15.33	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	09.18.19 15.33	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	09.18.19 15.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	130	%	70-135	09.18.19 15.33	
o-Terphenyl	84-15-1	104	%	70-135	09.18.19 15.33	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW37**
Lab Sample Id: 637191-003

Matrix: Soil
Date Collected: 09.17.19 10.50

Date Received: 09.17.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DTH

Analyst: DTH

Seq Number: 3101957

Date Prep: 09.18.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.18.19 18.27	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.18.19 18.27	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.18.19 18.27	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.18.19 18.27	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.18.19 18.27	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.18.19 18.27	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.18.19 18.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.18.19 18.27		
4-Bromofluorobenzene	460-00-4	104	%	70-130	09.18.19 18.27		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW38**
Lab Sample Id: 637191-004

Matrix: Soil
Date Collected: 09.17.19 10.45

Date Received: 09.17.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101898

Date Prep: 09.18.19 12.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	556	20.1	mg/kg	09.18.19 15.26		2

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101952

Date Prep: 09.18.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	95.9	50.0	mg/kg	09.20.19 09.58		1
Diesel Range Organics (DRO)	C10C28DRO	1160	50.0	mg/kg	09.20.19 09.58		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.20.19 09.58	U	1
Total GRO-DRO	PHC628	1260	50.0	mg/kg	09.20.19 09.58		1
Total TPH	PHC635	1260	50.0	mg/kg	09.20.19 09.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	09.20.19 09.58	
o-Terphenyl	84-15-1	118	%	70-135	09.20.19 09.58	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW38**
Lab Sample Id: 637191-004

Matrix: Soil
Date Collected: 09.17.19 10.45

Date Received: 09.17.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.18.19 12.00

Basis: Wet Weight

Seq Number: 3101957

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000992	0.000992	mg/kg	09.18.19 18.47	U	1
Toluene	108-88-3	0.00316	0.000992	mg/kg	09.18.19 18.47		1
Ethylbenzene	100-41-4	0.0175	0.000992	mg/kg	09.18.19 18.47		1
m,p-Xylenes	179601-23-1	0.140	0.00198	mg/kg	09.18.19 18.47		1
o-Xylene	95-47-6	0.0575	0.000992	mg/kg	09.18.19 18.47		1
Total Xylenes	1330-20-7	0.198	0.000992	mg/kg	09.18.19 18.47		1
Total BTEX		0.218	0.000992	mg/kg	09.18.19 18.47		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	215	%	70-130	09.18.19 18.47	**	
1,4-Difluorobenzene	540-36-3	126	%	70-130	09.18.19 18.47		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW39**
Lab Sample Id: 637191-005

Matrix: Soil
Date Collected: 09.17.19 11.00

Date Received: 09.17.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101898

Date Prep: 09.18.19 12.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1030	50.4	mg/kg	09.18.19 15.32		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101952

Date Prep: 09.18.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	09.18.19 16.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	09.18.19 16.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	09.18.19 16.15	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	09.18.19 16.15	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	09.18.19 16.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	09.18.19 16.15	
o-Terphenyl	84-15-1	70	%	70-135	09.18.19 16.15	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW39**
Lab Sample Id: 637191-005

Matrix: Soil
Date Collected: 09.17.19 11.00

Date Received: 09.17.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.18.19 12.00

Basis: Wet Weight

Seq Number: 3101957

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.18.19 19.07	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.18.19 19.07	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.18.19 19.07	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.18.19 19.07	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.18.19 19.07	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.18.19 19.07	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.18.19 19.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	09.18.19 19.07		
1,4-Difluorobenzene	540-36-3	120	%	70-130	09.18.19 19.07		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW40**
Lab Sample Id: 637191-006

Matrix: Soil
Date Collected: 09.17.19 10.55

Date Received: 09.17.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101898

Date Prep: 09.18.19 12.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	551	10.0	mg/kg	09.18.19 16.14		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101952

Date Prep: 09.18.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	09.18.19 16.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	09.18.19 16.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	09.18.19 16.36	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	09.18.19 16.36	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	09.18.19 16.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	09.18.19 16.36	
o-Terphenyl	84-15-1	101	%	70-135	09.18.19 16.36	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW40**
Lab Sample Id: 637191-006

Matrix: Soil
Date Collected: 09.17.19 10.55

Date Received: 09.17.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.18.19 12.00

Basis: Wet Weight

Seq Number: 3101957

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.18.19 19.27	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.18.19 19.27	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.18.19 19.27	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.18.19 19.27	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.18.19 19.27	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.18.19 19.27	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.18.19 19.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	120	%	70-130	09.18.19 19.27		
1,4-Difluorobenzene	540-36-3	111	%	70-130	09.18.19 19.27		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW41** Matrix: Soil Date Received: 09.17.19 16.55
 Lab Sample Id: 637191-007 Date Collected: 09.17.19 11.50 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.18.19 12.09 Basis: Wet Weight
 Seq Number: 3101898

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19.8	10.1	mg/kg	09.18.19 16.21		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.18.19 11.00 Basis: Wet Weight
 Seq Number: 3101952

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	09.18.19 16.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	09.18.19 16.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	09.18.19 16.57	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	09.18.19 16.57	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	09.18.19 16.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	136	%	70-135	09.18.19 16.57	**
o-Terphenyl	84-15-1	106	%	70-135	09.18.19 16.57	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW41**
Lab Sample Id: 637191-007

Matrix: Soil
Date Collected: 09.17.19 11.50

Date Received: 09.17.19 16.55
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.18.19 12.00

Basis: Wet Weight

Seq Number: 3101957

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.18.19 19.46	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.18.19 19.46	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.18.19 19.46	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.18.19 19.46	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.18.19 19.46	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.18.19 19.46	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.18.19 19.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	09.18.19 19.46		
4-Bromofluorobenzene	460-00-4	116	%	70-130	09.18.19 19.46		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW42**
Lab Sample Id: 637191-008

Matrix: Soil
Date Collected: 09.17.19 12.00

Date Received: 09.17.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101898

Date Prep: 09.18.19 12.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	264	9.98	mg/kg	09.18.19 16.27		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101952

Date Prep: 09.18.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	09.19.19 09.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	09.19.19 09.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	09.19.19 09.30	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	09.19.19 09.30	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	09.19.19 09.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	09.19.19 09.30	
o-Terphenyl	84-15-1	97	%	70-135	09.19.19 09.30	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW42**
Lab Sample Id: 637191-008

Matrix: Soil
Date Collected: 09.17.19 12.00

Date Received: 09.17.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.18.19 12.00

Basis: Wet Weight

Seq Number: 3101957

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.18.19 20.06	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.18.19 20.06	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.18.19 20.06	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.18.19 20.06	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.18.19 20.06	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.18.19 20.06	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.18.19 20.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	09.18.19 20.06		
4-Bromofluorobenzene	460-00-4	115	%	70-130	09.18.19 20.06		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW43**
Lab Sample Id: 637191-009

Matrix: Soil
Date Collected: 09.17.19 12.05

Date Received: 09.17.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101898

Date Prep: 09.18.19 12.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	84.1	9.96	mg/kg	09.18.19 16.41		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101952

Date Prep: 09.18.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	09.19.19 10.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	09.19.19 10.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	09.19.19 10.11	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	09.19.19 10.11	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	09.19.19 10.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	132	%	70-135	09.19.19 10.11	
o-Terphenyl	84-15-1	98	%	70-135	09.19.19 10.11	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW43**
Lab Sample Id: 637191-009

Matrix: Soil
Date Collected: 09.17.19 12.05

Date Received: 09.17.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.18.19 12.00

Basis: Wet Weight

Seq Number: 3101957

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.18.19 20.26	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.18.19 20.26	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.18.19 20.26	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.18.19 20.26	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.18.19 20.26	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.18.19 20.26	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.18.19 20.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	09.18.19 20.26		
4-Bromofluorobenzene	460-00-4	114	%	70-130	09.18.19 20.26		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW44**
Lab Sample Id: 637191-010

Matrix: Soil
Date Collected: 09.17.19 12.30

Date Received: 09.17.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101898

Date Prep: 09.18.19 12.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	30.6	9.94	mg/kg	09.18.19 16.47		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101952

Date Prep: 09.18.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	09.19.19 10.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	09.19.19 10.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	09.19.19 10.32	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	09.19.19 10.32	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	09.19.19 10.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	130	%	70-135	09.19.19 10.32	
o-Terphenyl	84-15-1	102	%	70-135	09.19.19 10.32	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW44**
Lab Sample Id: 637191-010

Matrix: Soil
Date Collected: 09.17.19 12.30

Date Received: 09.17.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.18.19 12.00

Basis: Wet Weight

Seq Number: 3101957

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	09.18.19 20.45	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	09.18.19 20.45	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	09.18.19 20.45	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	09.18.19 20.45	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	09.18.19 20.45	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	09.18.19 20.45	U	1
Total BTEX		<0.000998	0.000998	mg/kg	09.18.19 20.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	09.18.19 20.45		
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.18.19 20.45		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW45**
Lab Sample Id: 637191-011

Matrix: Soil
Date Collected: 09.17.19 12.25

Date Received: 09.17.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101898

Date Prep: 09.18.19 12.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	208	10.0	mg/kg	09.18.19 16.54		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101952

Date Prep: 09.18.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	09.19.19 11.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	09.19.19 11.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	09.19.19 11.13	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	09.19.19 11.13	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	09.19.19 11.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	130	%	70-135	09.19.19 11.13	
o-Terphenyl	84-15-1	103	%	70-135	09.19.19 11.13	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW45**
Lab Sample Id: 637191-011

Matrix: Soil
Date Collected: 09.17.19 12.25

Date Received: 09.17.19 16.55
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DTH

Analyst: DTH

Seq Number: 3101957

Date Prep: 09.18.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	09.18.19 21.44	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	09.18.19 21.44	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	09.18.19 21.44	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	09.18.19 21.44	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	09.18.19 21.44	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	09.18.19 21.44	U	1
Total BTEX		<0.000996	0.000996	mg/kg	09.18.19 21.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	09.18.19 21.44		
1,4-Difluorobenzene	540-36-3	108	%	70-130	09.18.19 21.44		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **FS08A**
Lab Sample Id: 637191-012

Matrix: Soil
Date Collected: 09.17.19 12.35

Date Received: 09.17.19 16.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101898

Date Prep: 09.18.19 12.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1120	49.5	mg/kg	09.18.19 17.13		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101952

Date Prep: 09.18.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.19.19 11.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.19.19 11.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.19.19 11.33	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	09.19.19 11.33	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.19.19 11.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	133	%	70-135	09.19.19 11.33	
o-Terphenyl	84-15-1	105	%	70-135	09.19.19 11.33	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **FS08A**
Lab Sample Id: 637191-012

Matrix: Soil
Date Collected: 09.17.19 12.35

Date Received: 09.17.19 16.55
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DTH

Analyst: DTH

Seq Number: 3101957

Date Prep: 09.18.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	09.18.19 22.04	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	09.18.19 22.04	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	09.18.19 22.04	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	09.18.19 22.04	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	09.18.19 22.04	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	09.18.19 22.04	U	1
Total BTEX		<0.000996	0.000996	mg/kg	09.18.19 22.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	112	%	70-130	09.18.19 22.04		
4-Bromofluorobenzene	460-00-4	111	%	70-130	09.18.19 22.04		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **FS82** Matrix: Soil Date Received: 09.17.19 16.55
 Lab Sample Id: 637191-013 Date Collected: 09.17.19 13.05 Sample Depth: 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.18.19 12.09 Basis: Wet Weight
 Seq Number: 3101898

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	25.5	9.92	mg/kg	09.18.19 17.26		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.18.19 11.00 Basis: Wet Weight
 Seq Number: 3101952

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	09.19.19 11.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	117	50.3	mg/kg	09.19.19 11.54		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	09.19.19 11.54	U	1
Total GRO-DRO	PHC628	117	50.3	mg/kg	09.19.19 11.54		1
Total TPH	PHC635	117	50.3	mg/kg	09.19.19 11.54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	132	%	70-135	09.19.19 11.54	
o-Terphenyl	84-15-1	126	%	70-135	09.19.19 11.54	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **FS82**
Lab Sample Id: 637191-013

Matrix: Soil
Date Collected: 09.17.19 13.05

Date Received: 09.17.19 16.55
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.18.19 12.00

Basis: Wet Weight

Seq Number: 3101957

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.18.19 22.23	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.18.19 22.23	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.18.19 22.23	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	09.18.19 22.23	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.18.19 22.23	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.18.19 22.23	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.18.19 22.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	09.18.19 22.23		
4-Bromofluorobenzene	460-00-4	100	%	70-130	09.18.19 22.23		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **FS84**
Lab Sample Id: 637191-014

Matrix: Soil
Date Collected: 09.17.19 13.15

Date Received: 09.17.19 16.55
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101898

Date Prep: 09.18.19 12.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.7	9.90	mg/kg	09.18.19 17.46		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101952

Date Prep: 09.18.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	09.19.19 12.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	09.19.19 12.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	09.19.19 12.15	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	09.19.19 12.15	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	09.19.19 12.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	09.19.19 12.15	
o-Terphenyl	84-15-1	91	%	70-135	09.19.19 12.15	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **FS84**
Lab Sample Id: 637191-014

Matrix: Soil
Date Collected: 09.17.19 13.15

Date Received: 09.17.19 16.55
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.18.19 12.00

Basis: Wet Weight

Seq Number: 3101957

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.18.19 22.43	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.18.19 22.43	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.18.19 22.43	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.18.19 22.43	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.18.19 22.43	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.18.19 22.43	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.18.19 22.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	09.18.19 22.43		
4-Bromofluorobenzene	460-00-4	107	%	70-130	09.18.19 22.43		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **FS85**
Lab Sample Id: 637191-015

Matrix: Soil
Date Collected: 09.17.19 13.20

Date Received: 09.17.19 16.55
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101898

Date Prep: 09.18.19 12.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	42.4	10.1	mg/kg	09.18.19 17.52		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101952

Date Prep: 09.18.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	09.19.19 12.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	59.6	50.1	mg/kg	09.19.19 12.35		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	09.19.19 12.35	U	1
Total GRO-DRO	PHC628	59.6	50.1	mg/kg	09.19.19 12.35		1
Total TPH	PHC635	59.6	50.1	mg/kg	09.19.19 12.35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	09.19.19 12.35	
o-Terphenyl	84-15-1	107	%	70-135	09.19.19 12.35	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **FS85**
Lab Sample Id: 637191-015

Matrix: Soil
Date Collected: 09.17.19 13.20

Date Received: 09.17.19 16.55
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.18.19 12.00

Basis: Wet Weight

Seq Number: 3101957

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.18.19 23.03	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.18.19 23.03	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.18.19 23.03	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.18.19 23.03	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.18.19 23.03	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.18.19 23.03	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.18.19 23.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	09.18.19 23.03		
1,4-Difluorobenzene	540-36-3	106	%	70-130	09.18.19 23.03		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW46**
Lab Sample Id: 637191-016

Matrix: Soil
Date Collected: 09.17.19 13.25

Date Received: 09.17.19 16.55
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101898

Date Prep: 09.18.19 12.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.1	9.94	mg/kg	09.18.19 17.58		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101952

Date Prep: 09.18.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	09.19.19 12.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	09.19.19 12.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	09.19.19 12.56	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	09.19.19 12.56	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	09.19.19 12.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	09.19.19 12.56	
o-Terphenyl	84-15-1	96	%	70-135	09.19.19 12.56	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SW46**
Lab Sample Id: 637191-016

Matrix: Soil
Date Collected: 09.17.19 13.25

Date Received: 09.17.19 16.55
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.18.19 12.00

Basis: Wet Weight

Seq Number: 3101957

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.18.19 23.22	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.18.19 23.22	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.18.19 23.22	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.18.19 23.22	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.18.19 23.22	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.18.19 23.22	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.18.19 23.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	09.18.19 23.22		
1,4-Difluorobenzene	540-36-3	97	%	70-130	09.18.19 23.22		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SS47**
Lab Sample Id: 637191-017

Matrix: Soil
Date Collected: 09.17.19 13.30

Date Received: 09.17.19 16.55
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101898

Date Prep: 09.18.19 12.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.6	10.1	mg/kg	09.18.19 18.05		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101952

Date Prep: 09.18.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	09.19.19 13.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	147	50.1	mg/kg	09.19.19 13.17		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	09.19.19 13.17	U	1
Total GRO-DRO	PHC628	147	50.1	mg/kg	09.19.19 13.17		1
Total TPH	PHC635	147	50.1	mg/kg	09.19.19 13.17		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	09.19.19 13.17	
o-Terphenyl	84-15-1	112	%	70-135	09.19.19 13.17	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SS47**
Lab Sample Id: 637191-017

Matrix: Soil
Date Collected: 09.17.19 13.30

Date Received: 09.17.19 16.55
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: DTH

Analyst: DTH

Seq Number: 3101957

Date Prep: 09.18.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.18.19 23.42	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.18.19 23.42	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.18.19 23.42	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.18.19 23.42	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.18.19 23.42	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.18.19 23.42	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.18.19 23.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	09.18.19 23.42		
1,4-Difluorobenzene	540-36-3	104	%	70-130	09.18.19 23.42		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SS04**
Lab Sample Id: 637191-018

Matrix: Soil
Date Collected: 09.17.19 12.40

Date Received: 09.17.19 16.55
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101898

Date Prep: 09.18.19 12.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.94	9.94	mg/kg	09.18.19 18.11	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3101952

Date Prep: 09.18.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.19.19 13.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	09.19.19 13.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	09.19.19 13.37	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	09.19.19 13.37	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	09.19.19 13.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	09.19.19 13.37	
o-Terphenyl	84-15-1	99	%	70-135	09.19.19 13.37	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SS04**
Lab Sample Id: 637191-018

Matrix: Soil
Date Collected: 09.17.19 12.40

Date Received: 09.17.19 16.55
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.18.19 12.00

Basis: Wet Weight

Seq Number: 3101957

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.19.19 00.02	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.19.19 00.02	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.19.19 00.02	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.19.19 00.02	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.19.19 00.02	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.19.19 00.02	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.19.19 00.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	125	%	70-130	09.19.19 00.02		
1,4-Difluorobenzene	540-36-3	98	%	70-130	09.19.19 00.02		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SS05** Matrix: Soil Date Received: 09.17.19 16.55
 Lab Sample Id: 637191-019 Date Collected: 09.17.19 12.45 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.18.19 12.09 Basis: Wet Weight
 Seq Number: 3101898

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.9	9.92	mg/kg	09.18.19 18.18		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.18.19 11.00 Basis: Wet Weight
 Seq Number: 3101952

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.19.19 13.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.19.19 13.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.19.19 13.58	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	09.19.19 13.58	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.19.19 13.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	09.19.19 13.58	
o-Terphenyl	84-15-1	74	%	70-135	09.19.19 13.58	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SS05**
Lab Sample Id: 637191-019

Matrix: Soil
Date Collected: 09.17.19 12.45

Date Received: 09.17.19 16.55
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.18.19 12.00

Basis: Wet Weight

Seq Number: 3101957

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	09.19.19 00.22	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	09.19.19 00.22	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	09.19.19 00.22	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	09.19.19 00.22	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	09.19.19 00.22	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	09.19.19 00.22	U	1
Total BTEX		<0.000996	0.000996	mg/kg	09.19.19 00.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	09.19.19 00.22		
4-Bromofluorobenzene	460-00-4	105	%	70-130	09.19.19 00.22		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SS06** Matrix: Soil Date Received: 09.17.19 16.55
 Lab Sample Id: 637191-020 Date Collected: 09.17.19 12.50 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.18.19 13.09 Basis: Wet Weight
 Seq Number: 3101899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	09.18.19 19.03	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.18.19 11.00 Basis: Wet Weight
 Seq Number: 3101952

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.19.19 14.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	75.6	50.0	mg/kg	09.19.19 14.19		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.19.19 14.19	U	1
Total GRO-DRO	PHC628	75.6	50.0	mg/kg	09.19.19 14.19		1
Total TPH	PHC635	75.6	50.0	mg/kg	09.19.19 14.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	146	%	70-135	09.19.19 14.19	**
o-Terphenyl	84-15-1	74	%	70-135	09.19.19 14.19	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SS06**
Lab Sample Id: 637191-020

Matrix: Soil
Date Collected: 09.17.19 12.50

Date Received: 09.17.19 16.55
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 09.18.19 12.00

Basis: Wet Weight

Seq Number: 3101957

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.19.19 00.41	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.19.19 00.41	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.19.19 00.41	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.19.19 00.41	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.19.19 00.41	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.19.19 00.41	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.19.19 00.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	09.19.19 00.41		
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.19.19 00.41		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SS07** Matrix: Soil Date Received: 09.17.19 16.55
 Lab Sample Id: 637191-021 Date Collected: 09.17.19 12.55 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.18.19 13.09 Basis: Wet Weight
 Seq Number: 3101899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	09.18.19 19.22	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.18.19 16.45 Basis: Wet Weight
 Seq Number: 3102031

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	09.19.19 16.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	09.19.19 16.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	09.19.19 16.26	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	09.19.19 16.26	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	09.19.19 16.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	130	%	70-135	09.19.19 16.26	
o-Terphenyl	84-15-1	101	%	70-135	09.19.19 16.26	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SS07**
Lab Sample Id: 637191-021

Matrix: Soil
Date Collected: 09.17.19 12.55

Date Received: 09.17.19 16.55
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101958

Date Prep: 09.18.19 16.09

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.19.19 02.59	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.19.19 02.59	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.19.19 02.59	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.19.19 02.59	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.19.19 02.59	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.19.19 02.59	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.19.19 02.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	09.19.19 02.59		
1,4-Difluorobenzene	540-36-3	95	%	70-130	09.19.19 02.59		



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SS08**
Lab Sample Id: 637191-022

Matrix: Soil
Date Collected: 09.17.19 13.00

Date Received: 09.17.19 16.55
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3101899

Date Prep: 09.18.19 13.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.86	9.86	mg/kg	09.18.19 19.29	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3102031

Date Prep: 09.18.19 16.45

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	09.19.19 17.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	09.19.19 17.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	09.19.19 17.29	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	09.19.19 17.29	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	09.19.19 17.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	09.19.19 17.29	
o-Terphenyl	84-15-1	87	%	70-135	09.19.19 17.29	



Certificate of Analytical Results 637191

LT Environmental, Inc., Arvada, CO

Remuda Obs Well #001

Sample Id: **SS08**
Lab Sample Id: 637191-022

Matrix: Soil
Date Collected: 09.17.19 13.00

Date Received: 09.17.19 16.55
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3101958

Prep Method: SW5030B

% Moisture:

Date Prep: 09.18.19 16.09

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.19.19 04.17	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.19.19 04.17	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.19.19 04.17	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.19.19 04.17	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.19.19 04.17	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.19.19 04.17	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.19.19 04.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	124	%	70-130	09.19.19 04.17		
1,4-Difluorobenzene	540-36-3	89	%	70-130	09.19.19 04.17		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda Obs Well #001

Analytical Method: Chloride by EPA 300

Seq Number: 3101898

MB Sample Id: 7686417-1-BLK

Matrix: Solid

LCS Sample Id: 7686417-1-BKS

Prep Method: E300P

Date Prep: 09.18.19

LCSD Sample Id: 7686417-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	259	104	259	104	90-110	0	20	mg/kg	09.18.19 14:40	

Analytical Method: Chloride by EPA 300

Seq Number: 3101899

MB Sample Id: 7686418-1-BLK

Matrix: Solid

LCS Sample Id: 7686418-1-BKS

Prep Method: E300P

Date Prep: 09.18.19

LCSD Sample Id: 7686418-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	260	104	258	103	90-110	1	20	mg/kg	09.18.19 18:50	

Analytical Method: Chloride by EPA 300

Seq Number: 3101898

Parent Sample Id: 637191-001

Matrix: Soil

MS Sample Id: 637191-001 S

Prep Method: E300P

Date Prep: 09.18.19

MSD Sample Id: 637191-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	46.2	200	268	111	272	113	90-110	1	20	mg/kg	09.18.19 15:00	X

Analytical Method: Chloride by EPA 300

Seq Number: 3101898

Parent Sample Id: 637191-011

Matrix: Soil

MS Sample Id: 637191-011 S

Prep Method: E300P

Date Prep: 09.18.19

MSD Sample Id: 637191-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	208	198	435	115	444	117	90-110	2	20	mg/kg	09.18.19 17:00	X

Analytical Method: Chloride by EPA 300

Seq Number: 3101899

Parent Sample Id: 637191-020

Matrix: Soil

MS Sample Id: 637191-020 S

Prep Method: E300P

Date Prep: 09.18.19

MSD Sample Id: 637191-020 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4.71	200	204	100	216	106	90-110	6	20	mg/kg	09.18.19 19:10	

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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.

Remuda Obs Well #001

Analytical Method: Chloride by EPA 300

Seq Number: 3101899

Parent Sample Id: 637312-001

Matrix: Solid

MS Sample Id: 637312-001 S

Prep Method: E300P

Date Prep: 09.18.19

MSD Sample Id: 637312-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1220	1010	2390	116	2400	117	90-110	0	20	mg/kg	09.18.19 21:44	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3101952

MB Sample Id: 7686458-1-BLK

Matrix: Solid

LCS Sample Id: 7686458-1-BKS

Prep Method: SW8015P

Date Prep: 09.18.19

LCSD Sample Id: 7686458-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	916	92	933	93	70-135	2	35	mg/kg	09.18.19 13:27	
Diesel Range Organics (DRO)	<50.0	1000	905	91	912	91	70-135	1	35	mg/kg	09.18.19 13:27	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	136	**	132		131		70-135	%	09.18.19 13:27
o-Terphenyl	117		121		118		70-135	%	09.18.19 13:27

Analytical Method: TPH by SW8015 Mod

Seq Number: 3102031

MB Sample Id: 7686459-1-BLK

Matrix: Solid

LCS Sample Id: 7686459-1-BKS

Prep Method: SW8015P

Date Prep: 09.18.19

LCSD Sample Id: 7686459-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	951	95	986	99	70-135	4	35	mg/kg	09.19.19 15:45	
Diesel Range Organics (DRO)	<50.0	1000	914	91	942	94	70-135	3	35	mg/kg	09.19.19 15:45	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	135		133		138	**	70-135	%	09.19.19 15:45
o-Terphenyl	105		104		107		70-135	%	09.19.19 15:45

Analytical Method: TPH by SW8015 Mod

Seq Number: 3101952

Parent Sample Id: 637191-001

Matrix: Soil

MS Sample Id: 637191-001 S

Prep Method: SW8015P

Date Prep: 09.18.19

MSD Sample Id: 637191-001 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)	<49.8	996	1020	102	1030	103	70-135	1	35	mg/kg	09.18.19 14:30	
Diesel Range Organics (DRO)	<49.8	996	1070	107	1000	100	70-135	7	35	mg/kg	09.18.19 14:30	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	139	**	138	**	70-135	%	09.18.19 14:30
o-Terphenyl	73		124		70-135	%	09.18.19 14:30

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.

Remuda Obs Well #001

Analytical Method: TPH by SW8015 Mod

Seq Number: 3102031

Parent Sample Id: 637191-021

Matrix: Soil

MS Sample Id: 637191-021 S

Prep Method: SW8015P

Date Prep: 09.18.19

MSD Sample Id: 637191-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	917	92	948	94	70-135	3	35	mg/kg	09.19.19 16:47	
Diesel Range Organics (DRO)	<50.1	1000	874	87	907	90	70-135	4	35	mg/kg	09.19.19 16:47	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	137	**	130		70-135	%	09.19.19 16:47
o-Terphenyl	102		110		70-135	%	09.19.19 16:47

Analytical Method: BTEX by EPA 8021B

Seq Number: 3101957

MB Sample Id: 7686554-1-BLK

Matrix: Solid

LCS Sample Id: 7686554-1-BKS

Prep Method: SW5030B

Date Prep: 09.18.19

LCSD Sample Id: 7686554-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0860	86	0.0908	91	70-130	5	35	mg/kg	09.18.19 15:49	
Toluene	<0.00100	0.100	0.0875	88	0.0949	95	70-130	8	35	mg/kg	09.18.19 15:49	
Ethylbenzene	<0.00100	0.100	0.108	108	0.119	119	71-129	10	35	mg/kg	09.18.19 15:49	
m,p-Xylenes	<0.00200	0.200	0.218	109	0.242	121	70-135	10	35	mg/kg	09.18.19 15:49	
o-Xylene	<0.00100	0.100	0.108	108	0.121	121	71-133	11	35	mg/kg	09.18.19 15:49	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		84		89		70-130	%	09.18.19 15:49
4-Bromofluorobenzene	100		102		105		70-130	%	09.18.19 15:49

Analytical Method: BTEX by EPA 8021B

Seq Number: 3101958

MB Sample Id: 7686555-1-BLK

Matrix: Solid

LCS Sample Id: 7686555-1-BKS

Prep Method: SW5030B

Date Prep: 09.18.19

LCSD Sample Id: 7686555-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0813	81	0.0900	90	70-130	10	35	mg/kg	09.19.19 02:00	
Toluene	<0.00100	0.100	0.0977	98	0.0936	94	70-130	4	35	mg/kg	09.19.19 02:00	
Ethylbenzene	<0.00100	0.100	0.119	119	0.116	116	71-129	3	35	mg/kg	09.19.19 02:00	
m,p-Xylenes	<0.00200	0.200	0.242	121	0.233	117	70-135	4	35	mg/kg	09.19.19 02:00	
o-Xylene	<0.00100	0.100	0.120	120	0.116	116	71-133	3	35	mg/kg	09.19.19 02:00	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		107		102		70-130	%	09.19.19 02:00
4-Bromofluorobenzene	104		121		112		70-130	%	09.19.19 02:00

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

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

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

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



LT Environmental, Inc.

Remuda Obs Well #001

Analytical Method: BTEX by EPA 8021B

Seq Number: 3101957

Parent Sample Id: 637191-001

Matrix: Soil

MS Sample Id: 637191-001 S

Prep Method: SW5030B

Date Prep: 09.18.19

MSD Sample Id: 637191-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000992	0.0992	0.0788	79	0.0794	79	70-130	1	35	mg/kg	09.18.19 17:08	
Toluene	<0.000992	0.0992	0.0794	80	0.0799	79	70-130	1	35	mg/kg	09.18.19 17:08	
Ethylbenzene	<0.000992	0.0992	0.0936	94	0.0966	96	71-129	3	35	mg/kg	09.18.19 17:08	
m,p-Xylenes	<0.00198	0.198	0.192	97	0.199	99	70-135	4	35	mg/kg	09.18.19 17:08	
o-Xylene	<0.000992	0.0992	0.0967	97	0.100	99	71-133	3	35	mg/kg	09.18.19 17:08	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		112		70-130	%	09.18.19 17:08
4-Bromofluorobenzene	125		122		70-130	%	09.18.19 17:08

Analytical Method: BTEX by EPA 8021B

Seq Number: 3101958

Parent Sample Id: 637191-021

Matrix: Soil

MS Sample Id: 637191-021 S

Prep Method: SW5030B

Date Prep: 09.18.19

MSD Sample Id: 637191-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00101	0.101	0.0795	79	0.0831	82	70-130	4	35	mg/kg	09.19.19 03:18	
Toluene	<0.00101	0.101	0.0856	85	0.0825	82	70-130	4	35	mg/kg	09.19.19 03:18	
Ethylbenzene	<0.00101	0.101	0.0929	92	0.102	101	71-129	9	35	mg/kg	09.19.19 03:18	
m,p-Xylenes	<0.00201	0.201	0.189	94	0.206	102	70-135	9	35	mg/kg	09.19.19 03:18	
o-Xylene	<0.00101	0.101	0.0954	94	0.103	102	71-133	8	35	mg/kg	09.19.19 03:18	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	115		114		70-130	%	09.19.19 03:18
4-Bromofluorobenzene	127		130		70-130	%	09.19.19 03:18

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

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 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) 802-0300 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) 382-7550 Phoenix, AZ (480) 355-0800 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

Chain of Custody

Work Order No:

657191

www.xenco.com

Page 1 of 3

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littel
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:	dmair@xenco.com kmlittel@xenco.com

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

ANALYSIS REQUEST

Work Order Notes

Project Name:	Rennada 25 Oils Well #1	Turn Around	☐ Routine
Project Number:			☐ Rush: 3 day
P.O. Number:	2RP-5309	Due Date:	
Sampler's Name:	Robert McAfee		

SAMPLE RECEIPT	Temp Blank:	☒ Yes	☐ No
Temperature (°C):	3.5	Thermometer ID	T-NM-007
Received Inlet:	Yes	Correction Factor:	-0.2
Cooler Custody Seal:	Yes	Total Containers:	22
Sample Custody Seal:	Yes		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers															
					TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)													
SW35	S	09/17/18	1145	0-2'	X	X	X													
SW36			1140	0-2'	X	X	X													
SW37			1050	0-4'	X	X	X													
SW38			1045	0-4'	X	X	X													
SW39			1100	0-4'	X	X	X													
SW40			1055	0-4'	X	X	X													
SW41			1150	0-2'	X	X	X													
SW42			1200	0-4'	X	X	X													
SW43			1205	0-4'	X	X	X													
SW44			1250	0-4'	X	X	X													

Total 200.7 / 6010 200.8 / 6020:

Circle Method(s) and Metal(s) to be analyzed

8RCRA 13PFM 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 \$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>[Signature]</i>	<i>[Signature]</i>	1/17/19 16:55			



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 508-3334
 Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
 Hobbs, NM (505) 392-7550 Phoenix, AZ (480) 355-0500 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

Chain of Custody

Work Order No:

058191

www.xencolab.com

Page 2 of 3

Project Manager:	Dan Mori	Bill to: (if different)	Kyle Lillie
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:	dmori@xencolab.com mcalfee@xencolab.com

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

ANALYSIS REQUEST

Work Order Notes

Project Name:	Remuda 25 Obs Well #1	Turn Amount	☐
Project Number:		Routine	☐
P.O. Number:	2RP-5309	Rush: 3 day	
Sampler's Name:	Robert McAlfee	Due Date:	

Temperature (°C):	Yes	No	Thermometer ID
Received intact:	Yes	No	901791
Cooler Custody Seals:	Yes	No	Correction Factor:
Sample Custody Seals:	Yes	No	Total Containment:

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers										
					TPH (EPA 8015)	BTEX (EPA 8-8021)	Chloride (EPA 800.0)								
SW45	S	08/11/19	1225	0-4'	X	X	X								
ES08A			1235	4'	X	X	X								
FS82			1305	6'	X	X	X								
FS84			1315	3'	X	X	X								
FS85			1320	3'	X	X	X								
SW46			1325	0-3'	X	X	X								
SW47			1330	0-3'	X	X	X								
SS04			1240	0.5'	X	X	X								
SS05			1245	0.5'	X	X	X								
SS06			1250	0.5'	X	X	X								

Sample Comments

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

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SxO2 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

Note: 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
<i>[Signature]</i>	<i>[Signature]</i>	7/13/19 12:55			



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 508-3334
 Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 764-1296
 Hobbs, NM (575-392-7850) Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

Chain of Custody

Work Order No:

1037191

www.xenco.com

Page 3 of 3

Project Manager:	Dan Moir	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:	dmair@xenco.com mcalfee@xenco.com

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

ANALYSIS REQUEST

Work Order Notes

Project Name:	Remuda 25 Oils Well #1	Turn Around	☐
Project Number:		Routine	☐
P.O. Number:	ZRP-5309	Rush:	3 days
Sampler's Name:	Robert McAlfee	Due Date:	

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

Number of Containers

TPH (EPA 8015) ☒

BTEX (EPA 8-8021) ☒

Chloride (EPA 300.0) ☒

LAB states the day received by the lab, if received by 4:30pm

Sample Comments

done to discrete

Total 200.7 / 6010 200.8 / 6020:
 Circle Method(s) and Metal(s) to be analyzed

BRORA 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: BRORA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U

1631 / 245.1 / 7470 / 7471 : Hg

Note: Signature of rule 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 to 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

Relinquished by: (Signature)

9/17/19 10:55

Received by: (Signature)

9/17/19 10:55

Date/Time

9/17/19 10:55

Relinquished by: (Signature)

9/17/19 10:55

Received by: (Signature)

9/17/19 10:55

Date/Time

9/17/19 10:55



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 09/17/2019 04:55:00 PM

Work Order #: 637191

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 09/18/2019

Checklist reviewed by:

Jessica Kramer

Date: 09/18/2019

Analytical Report 638122

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda 25 Obs Well #1

27-SEP-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-21), 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-Tampa: Florida (E87429), North Carolina (483)



27-SEP-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **638122**

Remuda 25 Obs Well #1

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 638122. 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. 638122 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

**Sample Cross Reference 638122****LT Environmental, Inc., Arvada, CO**

Remuda 25 Obs Well #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	09-25-19 16:10	2 ft	638122-001
BH02	S	09-25-19 16:20	2 ft	638122-002
BH03	S	09-25-19 16:35	2 ft	638122-003
BH04	S	09-25-19 17:40	2 ft	638122-004
BH01A	S	09-25-19 17:20	6 ft	638122-005
BH02A	S	09-25-19 17:05	6 ft	638122-006
BH03A	S	09-25-19 16:50	6 ft	638122-007
BH04A	S	09-25-19 18:00	6 ft	638122-008



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 25 Obs Well #1

Project ID:
Work Order Number(s): 638122

Report Date: 27-SEP-19
Date Received: 09/26/2019

Sample receipt non conformance and comments:

None

Sample receipt non conformance and comments per sample:

None

Analytical non conformance and comments:

Batch: LBA-3102627 BTEX by EPA 8021B

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

Batch: LBA-3102649 TPH by SW8015 Mod

Surrogate 1-Chlorooctane, Surrogate o-Terphenyl recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7686966-1-BSD.



Certificate of Analysis Summary 638122

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Sep-26-19 08:40 am

Report Date: 27-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	638122-001	638122-002	638122-003	638122-004	638122-005	638122-006
	<i>Field Id:</i>	BH01	BH02	BH03	BH04	BH01A	BH02A
	<i>Depth:</i>	2- ft	2- ft	2- ft	2- ft	6- ft	6- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-25-19 16:10	Sep-25-19 16:20	Sep-25-19 16:35	Sep-25-19 17:40	Sep-25-19 17:20	Sep-25-19 17:05
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-26-19 09:09	Sep-26-19 09:09	Sep-26-19 09:09	Sep-26-19 09:09	Sep-26-19 09:09	Sep-26-19 09:09
	<i>Analyzed:</i>	Sep-26-19 14:00	Sep-26-19 14:20	Sep-26-19 14:39	Sep-26-19 14:59	Sep-26-19 15:19	Sep-26-19 15:39
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Toluene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Ethylbenzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
m,p-Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202
o-Xylene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Total Xylenes		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Total BTEX		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Chloride by EPA 300	<i>Extracted:</i>	Sep-26-19 10:09	Sep-26-19 10:09	Sep-26-19 10:09	Sep-26-19 10:09	Sep-26-19 10:09	Sep-26-19 10:09
	<i>Analyzed:</i>	Sep-26-19 12:16	Sep-26-19 12:23	Sep-26-19 12:43	Sep-26-19 12:50	Sep-26-19 12:56	Sep-26-19 13:03
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<9.88 9.88	12.9 9.92	116 9.94	36.0 9.96	<9.88 9.88	22.6 9.92
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-26-19 11:30	Sep-26-19 11:30	Sep-26-19 11:30	Sep-26-19 11:30	Sep-26-19 11:30	Sep-26-19 11:30
	<i>Analyzed:</i>	Sep-26-19 17:36	Sep-26-19 17:57	Sep-26-19 18:18	Sep-26-19 18:39	Sep-26-19 19:19	Sep-26-19 19:40
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.8 49.8	<50.0 50.0	<50.2 50.2	<50.2 50.2	<50.0 50.0	<50.2 50.2
Diesel Range Organics (DRO)		<49.8 49.8	<50.0 50.0	<50.2 50.2	<50.2 50.2	<50.0 50.0	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<50.0 50.0	<50.2 50.2	<50.2 50.2	<50.0 50.0	<50.2 50.2
Total GRO-DRO		<49.8 49.8	<50.0 50.0	<50.2 50.2	<50.2 50.2	<50.0 50.0	<50.2 50.2
Total TPH		<49.8 49.8	<50.0 50.0	<50.2 50.2	<50.2 50.2	<50.0 50.0	<50.2 50.2

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

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 638122

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Sep-26-19 08:40 am

Report Date: 27-SEP-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	638122-007	638122-008				
	Field Id:	BH03A	BH04A				
	Depth:	6- ft	6- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Sep-25-19 16:50	Sep-25-19 18:00				
BTEX by EPA 8021B	Extracted:	Sep-26-19 09:09	Sep-26-19 09:09				
	Analyzed:	Sep-26-19 15:59	Sep-26-19 16:58				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00101 0.00101	<0.00100 0.00100				
Toluene		<0.00101 0.00101	<0.00100 0.00100				
Ethylbenzene		<0.00101 0.00101	<0.00100 0.00100				
m,p-Xylenes		<0.00202 0.00202	<0.00200 0.00200				
o-Xylene		<0.00101 0.00101	<0.00100 0.00100				
Total Xylenes		<0.00101 0.00101	<0.00100 0.00100				
Total BTEX		<0.00101 0.00101	<0.00100 0.00100				
Chloride by EPA 300	Extracted:	Sep-26-19 10:09	Sep-26-19 10:09				
	Analyzed:	Sep-26-19 13:10	Sep-26-19 13:17				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		61.1 9.84	<9.96 9.96				
TPH by SW8015 Mod	Extracted:	Sep-26-19 11:30	Sep-26-19 11:30				
	Analyzed:	Sep-26-19 20:00	Sep-26-19 20:21				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.2 50.2				
Diesel Range Organics (DRO)		<50.3 50.3	<50.2 50.2				
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.2 50.2				
Total GRO-DRO		<50.3 50.3	<50.2 50.2				
Total TPH		<50.3 50.3	<50.2 50.2				

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 638122

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **BH01**
Lab Sample Id: 638122-001

Matrix: Soil
Date Collected: 09.25.19 16.10

Date Received: 09.26.19 08.40
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3102603

Date Prep: 09.26.19 10.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.88	9.88	mg/kg	09.26.19 12.16	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3102649

Date Prep: 09.26.19 11.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	09.26.19 17.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	09.26.19 17.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	09.26.19 17.36	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	09.26.19 17.36	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	09.26.19 17.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	09.26.19 17.36	
o-Terphenyl	84-15-1	94	%	70-135	09.26.19 17.36	



Certificate of Analytical Results 638122

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **BH01**
Lab Sample Id: 638122-001

Matrix: Soil
Date Collected: 09.25.19 16.10

Date Received: 09.26.19 08.40
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.26.19 09.09

Basis: Wet Weight

Seq Number: 3102627

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.26.19 14.00	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.26.19 14.00	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.26.19 14.00	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	09.26.19 14.00	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.26.19 14.00	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.26.19 14.00	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.26.19 14.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	09.26.19 14.00		
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.26.19 14.00		



Certificate of Analytical Results 638122

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **BH02**
Lab Sample Id: 638122-002

Matrix: Soil
Date Collected: 09.25.19 16.20

Date Received: 09.26.19 08.40
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3102603

Date Prep: 09.26.19 10.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.9	9.92	mg/kg	09.26.19 12.23		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3102649

Date Prep: 09.26.19 11.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.26.19 17.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.26.19 17.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.26.19 17.57	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	09.26.19 17.57	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.26.19 17.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	09.26.19 17.57	
o-Terphenyl	84-15-1	107	%	70-135	09.26.19 17.57	



Certificate of Analytical Results 638122

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **BH02**
Lab Sample Id: 638122-002

Matrix: Soil
Date Collected: 09.25.19 16.20

Date Received: 09.26.19 08.40
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.26.19 09.09

Basis: Wet Weight

Seq Number: 3102627

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.26.19 14.20	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.26.19 14.20	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.26.19 14.20	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	09.26.19 14.20	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.26.19 14.20	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.26.19 14.20	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.26.19 14.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	70-130	09.26.19 14.20		
1,4-Difluorobenzene	540-36-3	99	%	70-130	09.26.19 14.20		



Certificate of Analytical Results 638122

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **BH03** Matrix: Soil Date Received: 09.26.19 08.40
 Lab Sample Id: 638122-003 Date Collected: 09.25.19 16.35 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.26.19 10.09 Basis: Wet Weight
 Seq Number: 3102603

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	116	9.94	mg/kg	09.26.19 12.43		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.26.19 11.30 Basis: Wet Weight
 Seq Number: 3102649

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	09.26.19 18.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	09.26.19 18.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	09.26.19 18.18	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	09.26.19 18.18	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	09.26.19 18.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	129	%	70-135	09.26.19 18.18	
o-Terphenyl	84-15-1	117	%	70-135	09.26.19 18.18	



Certificate of Analytical Results 638122

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **BH03**
Lab Sample Id: 638122-003

Matrix: Soil
Date Collected: 09.25.19 16.35

Date Received: 09.26.19 08.40
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.26.19 09.09

Basis: Wet Weight

Seq Number: 3102627

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.26.19 14.39	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.26.19 14.39	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.26.19 14.39	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.26.19 14.39	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.26.19 14.39	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.26.19 14.39	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.26.19 14.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	09.26.19 14.39		
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.26.19 14.39		



Certificate of Analytical Results 638122

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **BH04**
Lab Sample Id: 638122-004

Matrix: Soil
Date Collected: 09.25.19 17.40

Date Received: 09.26.19 08.40
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3102603

Date Prep: 09.26.19 10.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	36.0	9.96	mg/kg	09.26.19 12.50		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3102649

Date Prep: 09.26.19 11.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	09.26.19 18.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	09.26.19 18.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	09.26.19 18.39	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	09.26.19 18.39	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	09.26.19 18.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	09.26.19 18.39	
o-Terphenyl	84-15-1	104	%	70-135	09.26.19 18.39	



Certificate of Analytical Results 638122

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **BH04**
Lab Sample Id: 638122-004

Matrix: Soil
Date Collected: 09.25.19 17.40

Date Received: 09.26.19 08.40
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3102627

Date Prep: 09.26.19 09.09

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.26.19 14.59	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.26.19 14.59	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.26.19 14.59	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.26.19 14.59	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.26.19 14.59	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.26.19 14.59	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.26.19 14.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	09.26.19 14.59		
4-Bromofluorobenzene	460-00-4	90	%	70-130	09.26.19 14.59		



Certificate of Analytical Results 638122

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **BH01A**
Lab Sample Id: 638122-005

Matrix: Soil
Date Collected: 09.25.19 17.20

Date Received: 09.26.19 08.40
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3102603

Date Prep: 09.26.19 10.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.88	9.88	mg/kg	09.26.19 12.56	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3102649

Date Prep: 09.26.19 11.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.26.19 19.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.26.19 19.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.26.19 19.19	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	09.26.19 19.19	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.26.19 19.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	09.26.19 19.19	
o-Terphenyl	84-15-1	102	%	70-135	09.26.19 19.19	



Certificate of Analytical Results 638122

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **BH01A**
Lab Sample Id: 638122-005

Matrix: Soil
Date Collected: 09.25.19 17.20

Date Received: 09.26.19 08.40
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.26.19 09.09

Basis: Wet Weight

Seq Number: 3102627

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.26.19 15.19	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.26.19 15.19	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.26.19 15.19	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.26.19 15.19	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.26.19 15.19	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.26.19 15.19	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.26.19 15.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.26.19 15.19		
4-Bromofluorobenzene	460-00-4	92	%	70-130	09.26.19 15.19		



Certificate of Analytical Results 638122

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **BH02A** Matrix: Soil Date Received: 09.26.19 08.40
 Lab Sample Id: 638122-006 Date Collected: 09.25.19 17.05 Sample Depth: 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.26.19 10.09 Basis: Wet Weight
 Seq Number: 3102603

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.6	9.92	mg/kg	09.26.19 13.03		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.26.19 11.30 Basis: Wet Weight
 Seq Number: 3102649

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	09.26.19 19.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	09.26.19 19.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	09.26.19 19.40	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	09.26.19 19.40	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	09.26.19 19.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	09.26.19 19.40	
o-Terphenyl	84-15-1	103	%	70-135	09.26.19 19.40	



Certificate of Analytical Results 638122

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **BH02A**
Lab Sample Id: 638122-006

Matrix: Soil
Date Collected: 09.25.19 17.05

Date Received: 09.26.19 08.40
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.26.19 09.09

Basis: Wet Weight

Seq Number: 3102627

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.26.19 15.39	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.26.19 15.39	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.26.19 15.39	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.26.19 15.39	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.26.19 15.39	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.26.19 15.39	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.26.19 15.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	09.26.19 15.39		
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.26.19 15.39		



Certificate of Analytical Results 638122

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **BH03A**
Lab Sample Id: 638122-007

Matrix: Soil
Date Collected: 09.25.19 16.50

Date Received: 09.26.19 08.40
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3102603

Date Prep: 09.26.19 10.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	61.1	9.84	mg/kg	09.26.19 13.10		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3102649

Date Prep: 09.26.19 11.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	09.26.19 20.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	09.26.19 20.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	09.26.19 20.00	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	09.26.19 20.00	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	09.26.19 20.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	09.26.19 20.00	
o-Terphenyl	84-15-1	113	%	70-135	09.26.19 20.00	



Certificate of Analytical Results 638122

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **BH03A**
Lab Sample Id: 638122-007

Matrix: Soil
Date Collected: 09.25.19 16.50

Date Received: 09.26.19 08.40
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.26.19 09.09

Basis: Wet Weight

Seq Number: 3102627

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.26.19 15.59	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.26.19 15.59	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.26.19 15.59	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.26.19 15.59	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.26.19 15.59	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.26.19 15.59	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.26.19 15.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	09.26.19 15.59		
1,4-Difluorobenzene	540-36-3	99	%	70-130	09.26.19 15.59		



Certificate of Analytical Results 638122

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **BH04A**
Lab Sample Id: 638122-008

Matrix: Soil
Date Collected: 09.25.19 18.00

Date Received: 09.26.19 08.40
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3102603

Date Prep: 09.26.19 10.09

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.96	9.96	mg/kg	09.26.19 13.17	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3102649

Date Prep: 09.26.19 11.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	09.26.19 20.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	09.26.19 20.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	09.26.19 20.21	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	09.26.19 20.21	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	09.26.19 20.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	09.26.19 20.21	
o-Terphenyl	84-15-1	105	%	70-135	09.26.19 20.21	



Certificate of Analytical Results 638122

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **BH04A**
Lab Sample Id: 638122-008

Matrix: Soil
Date Collected: 09.25.19 18.00

Date Received: 09.26.19 08.40
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.26.19 09.09

Basis: Wet Weight

Seq Number: 3102627

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.26.19 16.58	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.26.19 16.58	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.26.19 16.58	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	09.26.19 16.58	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.26.19 16.58	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.26.19 16.58	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.26.19 16.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.26.19 16.58		
4-Bromofluorobenzene	460-00-4	98	%	70-130	09.26.19 16.58		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 Obs Well #1

Analytical Method: Chloride by EPA 300

Seq Number: 3102603

MB Sample Id: 7686921-1-BLK

Matrix: Solid

LCS Sample Id: 7686921-1-BKS

Prep Method: E300P

Date Prep: 09.26.19

LCSD Sample Id: 7686921-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	255	102	256	102	90-110	0	20	mg/kg	09.26.19 11:32	

Analytical Method: Chloride by EPA 300

Seq Number: 3102603

Parent Sample Id: 638122-008

Matrix: Soil

MS Sample Id: 638122-008 S

Prep Method: E300P

Date Prep: 09.26.19

MSD Sample Id: 638122-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.80	200	205	100	213	104	90-110	4	20	mg/kg	09.26.19 13:23	

Analytical Method: Chloride by EPA 300

Seq Number: 3102603

Parent Sample Id: 638125-001

Matrix: Soil

MS Sample Id: 638125-001 S

Prep Method: E300P

Date Prep: 09.26.19

MSD Sample Id: 638125-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	236	199	502	134	499	133	90-110	1	20	mg/kg	09.26.19 11:51	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3102649

MB Sample Id: 7686966-1-BLK

Matrix: Solid

LCS Sample Id: 7686966-1-BKS

Prep Method: SW8015P

Date Prep: 09.26.19

LCSD Sample Id: 7686966-1-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	1170	117	1140	114	70-135	3	35	mg/kg	09.26.19 13:30	
Diesel Range Organics (DRO)	<15.0	1000	1250	125	1200	120	70-135	4	35	mg/kg	09.26.19 13:30	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		127		142	**	70-135	%	09.26.19 13:30
o-Terphenyl	110		118		146	**	70-135	%	09.26.19 13:30

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

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

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

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



LT Environmental, Inc.

Remuda 25 Obs Well #1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3102649

Parent Sample Id: 638033-015

Matrix: Soil

MS Sample Id: 638033-015 S

Prep Method: SW8015P

Date Prep: 09.26.19

MSD Sample Id: 638033-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1320	132	1210	121	70-135	9	35	mg/kg	09.26.19 16:14	
Diesel Range Organics (DRO)	<15.0	1000	1380	138	1350	136	70-135	2	35	mg/kg	09.26.19 16:14	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		116		70-135	%	09.26.19 16:14
o-Terphenyl	131		121		70-135	%	09.26.19 16:14

Analytical Method: BTEX by EPA 8021B

Seq Number: 3102627

MB Sample Id: 7687004-1-BLK

Matrix: Solid

LCS Sample Id: 7687004-1-BKS

Prep Method: SW5030B

Date Prep: 09.26.19

LCSD Sample Id: 7687004-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0895	90	0.0875	88	70-130	2	35	mg/kg	09.26.19 11:01	
Toluene	<0.00100	0.100	0.0942	94	0.0930	93	70-130	1	35	mg/kg	09.26.19 11:01	
Ethylbenzene	<0.00100	0.100	0.111	111	0.111	111	71-129	0	35	mg/kg	09.26.19 11:01	
m,p-Xylenes	<0.00200	0.200	0.225	113	0.222	111	70-135	1	35	mg/kg	09.26.19 11:01	
o-Xylene	<0.00100	0.100	0.112	112	0.111	111	71-133	1	35	mg/kg	09.26.19 11:01	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		99		100		70-130	%	09.26.19 11:01
4-Bromofluorobenzene	97		113		107		70-130	%	09.26.19 11:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3102627

Parent Sample Id: 638033-018

Matrix: Soil

MS Sample Id: 638033-018 S

Prep Method: SW5030B

Date Prep: 09.26.19

MSD Sample Id: 638033-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00101	0.101	0.0891	88	0.0930	92	70-130	4	35	mg/kg	09.26.19 12:21	
Toluene	<0.00101	0.101	0.0980	97	0.101	100	70-130	3	35	mg/kg	09.26.19 12:21	
Ethylbenzene	<0.00101	0.101	0.106	105	0.110	109	71-129	4	35	mg/kg	09.26.19 12:21	
m,p-Xylenes	<0.00201	0.201	0.214	106	0.224	111	70-135	5	35	mg/kg	09.26.19 12:21	
o-Xylene	<0.00101	0.101	0.105	104	0.110	109	71-133	5	35	mg/kg	09.26.19 12:21	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		112		70-130	%	09.26.19 12:21
4-Bromofluorobenzene	111		115		70-130	%	09.26.19 12:21

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

Work Order No: 638 122

Page 1 of 1

Project Manager:	Dan Mair	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:	dmair@ltenv.com rmcrafer@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: EDO ☐ ADAPT ☐ Other:			

Project Name:	Remuda 25 Ops well #	Turn Around	ANALYSIS REQUEST																Work Order Notes
Project Number:		Routine																	
P.O. Number:	2RF-5309	Rush:	24 hr																
Sample's Name:	Robert McAlise	Due Date:																	

SAMPLE RECEIPT		Temp Blank:	Yes	No	Well Ice:	Yes	No
Temperature (°C):	1.4	Thermometer ID:	T-NL-009				
Received In tact:	Yes	No					
Cooler Custody Seals:	Yes	No					
Sample Custody Seals:	Yes	No					
		Correction Factor:	-0.2				
		Total Containers:	9				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8-0021)	Chloride (EPA 300.0)																	Sample Comments
BH01	S	09/20/19	1610	2'	1	X	X	X																	discrete
BH02			1620	2'		X	X	X																	
BH03			1655	2'		X	X	X																	
BH04			1740	2'		X	X	X																	
BH01A			1720	6'		X	X	X																	
BH02A			1705	6'		X	X	X																	
BH03A			1650	6'		X	X	X																	
BH04A			1805	6'		X	X	X																	

Total 200.7 / 6010		200.8 / 6020:		8RCRA 13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Cs	Cr	Co	Cu	Fe	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	B	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U																
				1631 / 246.1 / 7470 / 7474 : Hg																																	

Use: 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 to Xenco. 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 McAlise</i>	<i>John</i>	092019 840			



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 09/26/2019 08:40:00 AM

Work Order #: 638122

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 09/26/2019

Checklist reviewed by:

Jessica Kramer

Date: 09/26/2019

Analytical Report 638171

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda 25 Obs Well# 1

27-SEP-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-21), 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-Tampa: Florida (E87429), North Carolina (483)



27-SEP-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **638171**

Remuda 25 Obs Well# 1

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 638171. 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. 638171 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

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 638171****LT Environmental, Inc., Arvada, CO**

Remuda 25 Obs Well# 1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH05	S	09-26-19 10:15	9 ft	638171-001
BH05A	S	09-26-19 10:20	11 ft	638171-002



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 25 Obs Well# 1

Project ID:
Work Order Number(s): 638171

Report Date: 27-SEP-19
Date Received: 09/26/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3102627 BTEX by EPA 8021B

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



Certificate of Analysis Summary 638171

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well# 1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Sep-26-19 11:50 am

Report Date: 27-SEP-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	638171-001	638171-002				
	Field Id:	BH05	BH05A				
	Depth:	9- ft	11- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Sep-26-19 10:15	Sep-26-19 10:20				
BTEX by EPA 8021B	Extracted:	Sep-26-19 12:15	Sep-26-19 12:15				
	Analyzed:	Sep-26-19 17:41	Sep-26-19 18:00				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00101 0.00101	<0.000998 0.000998				
Toluene		<0.00101 0.00101	<0.000998 0.000998				
Ethylbenzene		<0.00101 0.00101	<0.000998 0.000998				
m,p-Xylenes		<0.00202 0.00202	<0.00200 0.00200				
o-Xylene		<0.00101 0.00101	<0.000998 0.000998				
Total Xylenes		<0.00101 0.00101	<0.000998 0.000998				
Total BTEX		<0.00101 0.00101	<0.000998 0.000998				
Chloride by EPA 300	Extracted:	Sep-26-19 13:00	Sep-26-19 13:00				
	Analyzed:	Sep-26-19 13:57	Sep-26-19 14:04				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		3290 200	3350 201				
TPH by SW8015 Mod	Extracted:	Sep-26-19 17:00	Sep-26-19 17:00				
	Analyzed:	Sep-27-19 01:07	Sep-27-19 01:27				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0				
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0				
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0				
Total GRO-DRO		<50.0 50.0	<50.0 50.0				
Total TPH		<50.0 50.0	<50.0 50.0				

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
Project Assistant



Certificate of Analytical Results 638171

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **BH05**
Lab Sample Id: 638171-001

Matrix: Soil
Date Collected: 09.26.19 10.15

Date Received: 09.26.19 11.50
Sample Depth: 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3102603

Date Prep: 09.26.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3290	200	mg/kg	09.26.19 13.57		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3102656

Date Prep: 09.26.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.27.19 01.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.27.19 01.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.27.19 01.07	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	09.27.19 01.07	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.27.19 01.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	09.27.19 01.07	
o-Terphenyl	84-15-1	103	%	70-135	09.27.19 01.07	



Certificate of Analytical Results 638171

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **BH05**
Lab Sample Id: 638171-001

Matrix: Soil
Date Collected: 09.26.19 10.15

Date Received: 09.26.19 11.50
Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.26.19 12.15

Basis: Wet Weight

Seq Number: 3102627

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.26.19 17.41	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.26.19 17.41	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.26.19 17.41	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.26.19 17.41	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.26.19 17.41	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.26.19 17.41	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.26.19 17.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	09.26.19 17.41		
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.26.19 17.41		



Certificate of Analytical Results 638171

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **BH05A** Matrix: Soil Date Received: 09.26.19 11.50
 Lab Sample Id: 638171-002 Date Collected: 09.26.19 10.20 Sample Depth: 11 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.26.19 13.00 Basis: Wet Weight
 Seq Number: 3102603

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3350	201	mg/kg	09.26.19 14.04		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.26.19 17.00 Basis: Wet Weight
 Seq Number: 3102656

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.27.19 01.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.27.19 01.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.27.19 01.27	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	09.27.19 01.27	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.27.19 01.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	09.27.19 01.27	
o-Terphenyl	84-15-1	118	%	70-135	09.27.19 01.27	



Certificate of Analytical Results 638171

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **BH05A**
Lab Sample Id: 638171-002

Matrix: Soil
Date Collected: 09.26.19 10.20

Date Received: 09.26.19 11.50
Sample Depth: 11 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: DTH

Seq Number: 3102627

Date Prep: 09.26.19 12.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	09.26.19 18.00	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	09.26.19 18.00	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	09.26.19 18.00	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	09.26.19 18.00	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	09.26.19 18.00	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	09.26.19 18.00	U	1
Total BTEX		<0.000998	0.000998	mg/kg	09.26.19 18.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	09.26.19 18.00		
1,4-Difluorobenzene	540-36-3	108	%	70-130	09.26.19 18.00		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 Obs Well# 1

Analytical Method: Chloride by EPA 300

Seq Number: 3102603

MB Sample Id: 7686921-1-BLK

Matrix: Solid

LCS Sample Id: 7686921-1-BKS

Prep Method: E300P

Date Prep: 09.26.19

LCSD Sample Id: 7686921-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	255	102	256	102	90-110	0	20	mg/kg	09.26.19 11:32	

Analytical Method: Chloride by EPA 300

Seq Number: 3102603

Parent Sample Id: 638122-008

Matrix: Soil

MS Sample Id: 638122-008 S

Prep Method: E300P

Date Prep: 09.26.19

MSD Sample Id: 638122-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.80	200	205	100	213	104	90-110	4	20	mg/kg	09.26.19 13:23	

Analytical Method: Chloride by EPA 300

Seq Number: 3102603

Parent Sample Id: 638125-001

Matrix: Soil

MS Sample Id: 638125-001 S

Prep Method: E300P

Date Prep: 09.26.19

MSD Sample Id: 638125-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	236	199	502	134	499	133	90-110	1	20	mg/kg	09.26.19 11:51	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3102656

MB Sample Id: 7687016-1-BLK

Matrix: Solid

LCS Sample Id: 7687016-1-BKS

Prep Method: SW8015P

Date Prep: 09.26.19

LCSD Sample Id: 7687016-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1100	110	1170	117	70-135	6	35	mg/kg	09.26.19 23:25	
Diesel Range Organics (DRO)	<50.0	1000	1280	128	1340	134	70-135	5	35	mg/kg	09.26.19 23:25	

Surrogate

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		119		130		70-135	%	09.26.19 23:25
o-Terphenyl	100		113		119		70-135	%	09.26.19 23:25

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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.

Remuda 25 Obs Well# 1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3102656

Parent Sample Id: 638155-003

Matrix: Soil

MS Sample Id: 638155-003 S

Prep Method: SW8015P

Date Prep: 09.26.19

MSD Sample Id: 638155-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	1110	111	1220	122	70-135	9	35	mg/kg	09.27.19 00:26	
Diesel Range Organics (DRO)	<50.2	1000	1270	127	1300	130	70-135	2	35	mg/kg	09.27.19 00:26	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	130		126		70-135	%	09.27.19 00:26
o-Terphenyl	114		121		70-135	%	09.27.19 00:26

Analytical Method: BTEX by EPA 8021B

Seq Number: 3102627

MB Sample Id: 7687004-1-BLK

Matrix: Solid

LCS Sample Id: 7687004-1-BKS

Prep Method: SW5030B

Date Prep: 09.26.19

LCSD Sample Id: 7687004-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0895	90	0.0875	88	70-130	2	35	mg/kg	09.26.19 11:01	
Toluene	<0.00100	0.100	0.0942	94	0.0930	93	70-130	1	35	mg/kg	09.26.19 11:01	
Ethylbenzene	<0.00100	0.100	0.111	111	0.111	111	71-129	0	35	mg/kg	09.26.19 11:01	
m,p-Xylenes	<0.00200	0.200	0.225	113	0.222	111	70-135	1	35	mg/kg	09.26.19 11:01	
o-Xylene	<0.00100	0.100	0.112	112	0.111	111	71-133	1	35	mg/kg	09.26.19 11:01	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		99		100		70-130	%	09.26.19 11:01
4-Bromofluorobenzene	97		113		107		70-130	%	09.26.19 11:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3102627

Parent Sample Id: 638033-018

Matrix: Soil

MS Sample Id: 638033-018 S

Prep Method: SW5030B

Date Prep: 09.26.19

MSD Sample Id: 638033-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00101	0.101	0.0891	88	0.0930	92	70-130	4	35	mg/kg	09.26.19 12:21	
Toluene	<0.00101	0.101	0.0980	97	0.101	100	70-130	3	35	mg/kg	09.26.19 12:21	
Ethylbenzene	<0.00101	0.101	0.106	105	0.110	109	71-129	4	35	mg/kg	09.26.19 12:21	
m,p-Xylenes	<0.00201	0.201	0.214	106	0.224	111	70-135	5	35	mg/kg	09.26.19 12:21	
o-Xylene	<0.00101	0.101	0.105	104	0.110	109	71-133	5	35	mg/kg	09.26.19 12:21	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		112		70-130	%	09.26.19 12:21
4-Bromofluorobenzene	111		115		70-130	%	09.26.19 12:21

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

Work Order No:

63817

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3333
Midland, TX (432-704-5440) EL Paso, TX (915) 585-3463 Lubbock, TX (806) 756-1296

Houston, NM (505-332-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-820-2000)

WWW.XENOCO.COM

Page 7 of 7

Project Manager:	Dan Moir	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:	damoir@ltenv.com mccabe@ltenv.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: _____	

[illegible]



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 09/26/2019 11:50:00 AM

Work Order #: 638171

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-Nm-007

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	Yes
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 09/26/2019

Checklist reviewed by:

Jessica Kramer

Date: 09/26/2019

Analytical Report 638171

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda 25 Obs Well# 1

27-SEP-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-21), 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-Tampa: Florida (E87429), North Carolina (483)



27-SEP-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **638171**

Remuda 25 Obs Well# 1

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 638171. 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. 638171 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

**Sample Cross Reference 638171****LT Environmental, Inc., Arvada, CO**

Remuda 25 Obs Well# 1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH05	S	09-26-19 10:15	9 ft	638171-001
BH05A	S	09-26-19 10:20	11 ft	638171-002



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 25 Obs Well# 1

Project ID:
Work Order Number(s): 638171

Report Date: 27-SEP-19
Date Received: 09/26/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3102627 BTEX by EPA 8021B

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



Certificate of Analysis Summary 638171

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well# 1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Sep-26-19 11:50 am

Report Date: 27-SEP-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	638171-001	638171-002				
	Field Id:	BH05	BH05A				
	Depth:	9- ft	11- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Sep-26-19 10:15	Sep-26-19 10:20				
BTEX by EPA 8021B	Extracted:	Sep-26-19 12:15	Sep-26-19 12:15				
	Analyzed:	Sep-26-19 17:41	Sep-26-19 18:00				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00101 0.00101	<0.000998 0.000998				
	Toluene	<0.00101 0.00101	<0.000998 0.000998				
Ethylbenzene		<0.00101 0.00101	<0.000998 0.000998				
m,p-Xylenes		<0.00202 0.00202	<0.00200 0.00200				
o-Xylene		<0.00101 0.00101	<0.000998 0.000998				
Total Xylenes		<0.00101 0.00101	<0.000998 0.000998				
Total BTEX		<0.00101 0.00101	<0.000998 0.000998				
Chloride by EPA 300	Extracted:	Sep-26-19 13:00	Sep-26-19 13:00				
	Analyzed:	Sep-26-19 13:57	Sep-26-19 14:04				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		3290 200	3350 201				
TPH by SW8015 Mod	Extracted:	Sep-26-19 17:00	Sep-26-19 17:00				
	Analyzed:	Sep-27-19 01:07	Sep-27-19 01:27				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<50.0 50.0	<50.0 50.0				
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0				
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0				
Total GRO-DRO		<50.0 50.0	<50.0 50.0				
Total TPH		<50.0 50.0	<50.0 50.0				

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
Project Assistant



Certificate of Analytical Results 638171

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **BH05**
Lab Sample Id: 638171-001

Matrix: Soil
Date Collected: 09.26.19 10.15

Date Received: 09.26.19 11.50
Sample Depth: 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3102603

Date Prep: 09.26.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3290	200	mg/kg	09.26.19 13.57		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3102656

Date Prep: 09.26.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.27.19 01.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.27.19 01.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.27.19 01.07	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	09.27.19 01.07	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.27.19 01.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	09.27.19 01.07	
o-Terphenyl	84-15-1	103	%	70-135	09.27.19 01.07	



Certificate of Analytical Results 638171

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **BH05**
Lab Sample Id: 638171-001

Matrix: Soil
Date Collected: 09.26.19 10.15

Date Received: 09.26.19 11.50
Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.26.19 12.15

Basis: Wet Weight

Seq Number: 3102627

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.26.19 17.41	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.26.19 17.41	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.26.19 17.41	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.26.19 17.41	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.26.19 17.41	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.26.19 17.41	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.26.19 17.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	09.26.19 17.41		
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.26.19 17.41		



Certificate of Analytical Results 638171

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **BH05A** Matrix: Soil Date Received: 09.26.19 11.50
 Lab Sample Id: 638171-002 Date Collected: 09.26.19 10.20 Sample Depth: 11 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.26.19 13.00 Basis: Wet Weight
 Seq Number: 3102603

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3350	201	mg/kg	09.26.19 14.04		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.26.19 17.00 Basis: Wet Weight
 Seq Number: 3102656

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.27.19 01.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.27.19 01.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.27.19 01.27	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	09.27.19 01.27	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.27.19 01.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	09.27.19 01.27	
o-Terphenyl	84-15-1	118	%	70-135	09.27.19 01.27	



Certificate of Analytical Results 638171

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well# 1

Sample Id: **BH05A**
Lab Sample Id: 638171-002

Matrix: Soil
Date Collected: 09.26.19 10.20

Date Received: 09.26.19 11.50
Sample Depth: 11 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: DTH

Date Prep: 09.26.19 12.15

Basis: Wet Weight

Seq Number: 3102627

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	09.26.19 18.00	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	09.26.19 18.00	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	09.26.19 18.00	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	09.26.19 18.00	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	09.26.19 18.00	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	09.26.19 18.00	U	1
Total BTEX		<0.000998	0.000998	mg/kg	09.26.19 18.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	09.26.19 18.00		
1,4-Difluorobenzene	540-36-3	108	%	70-130	09.26.19 18.00		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 Obs Well# 1

Analytical Method: Chloride by EPA 300

Seq Number: 3102603

MB Sample Id: 7686921-1-BLK

Matrix: Solid

LCS Sample Id: 7686921-1-BKS

Prep Method: E300P

Date Prep: 09.26.19

LCSD Sample Id: 7686921-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	255	102	256	102	90-110	0	20	mg/kg	09.26.19 11:32	

Analytical Method: Chloride by EPA 300

Seq Number: 3102603

Parent Sample Id: 638122-008

Matrix: Soil

MS Sample Id: 638122-008 S

Prep Method: E300P

Date Prep: 09.26.19

MSD Sample Id: 638122-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.80	200	205	100	213	104	90-110	4	20	mg/kg	09.26.19 13:23	

Analytical Method: Chloride by EPA 300

Seq Number: 3102603

Parent Sample Id: 638125-001

Matrix: Soil

MS Sample Id: 638125-001 S

Prep Method: E300P

Date Prep: 09.26.19

MSD Sample Id: 638125-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	236	199	502	134	499	133	90-110	1	20	mg/kg	09.26.19 11:51	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3102656

MB Sample Id: 7687016-1-BLK

Matrix: Solid

LCS Sample Id: 7687016-1-BKS

Prep Method: SW8015P

Date Prep: 09.26.19

LCSD Sample Id: 7687016-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1100	110	1170	117	70-135	6	35	mg/kg	09.26.19 23:25	
Diesel Range Organics (DRO)	<50.0	1000	1280	128	1340	134	70-135	5	35	mg/kg	09.26.19 23:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		119		130		70-135	%	09.26.19 23:25
o-Terphenyl	100		113		119		70-135	%	09.26.19 23:25

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

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

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

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



LT Environmental, Inc.

Remuda 25 Obs Well# 1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3102656

Parent Sample Id: 638155-003

Matrix: Soil

MS Sample Id: 638155-003 S

Prep Method: SW8015P

Date Prep: 09.26.19

MSD Sample Id: 638155-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	1110	111	1220	122	70-135	9	35	mg/kg	09.27.19 00:26	
Diesel Range Organics (DRO)	<50.2	1000	1270	127	1300	130	70-135	2	35	mg/kg	09.27.19 00:26	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	130		126		70-135	%	09.27.19 00:26
o-Terphenyl	114		121		70-135	%	09.27.19 00:26

Analytical Method: BTEX by EPA 8021B

Seq Number: 3102627

MB Sample Id: 7687004-1-BLK

Matrix: Solid

LCS Sample Id: 7687004-1-BKS

Prep Method: SW5030B

Date Prep: 09.26.19

LCSD Sample Id: 7687004-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0895	90	0.0875	88	70-130	2	35	mg/kg	09.26.19 11:01	
Toluene	<0.00100	0.100	0.0942	94	0.0930	93	70-130	1	35	mg/kg	09.26.19 11:01	
Ethylbenzene	<0.00100	0.100	0.111	111	0.111	111	71-129	0	35	mg/kg	09.26.19 11:01	
m,p-Xylenes	<0.00200	0.200	0.225	113	0.222	111	70-135	1	35	mg/kg	09.26.19 11:01	
o-Xylene	<0.00100	0.100	0.112	112	0.111	111	71-133	1	35	mg/kg	09.26.19 11:01	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		99		100		70-130	%	09.26.19 11:01
4-Bromofluorobenzene	97		113		107		70-130	%	09.26.19 11:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3102627

Parent Sample Id: 638033-018

Matrix: Soil

MS Sample Id: 638033-018 S

Prep Method: SW5030B

Date Prep: 09.26.19

MSD Sample Id: 638033-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00101	0.101	0.0891	88	0.0930	92	70-130	4	35	mg/kg	09.26.19 12:21	
Toluene	<0.00101	0.101	0.0980	97	0.101	100	70-130	3	35	mg/kg	09.26.19 12:21	
Ethylbenzene	<0.00101	0.101	0.106	105	0.110	109	71-129	4	35	mg/kg	09.26.19 12:21	
m,p-Xylenes	<0.00201	0.201	0.214	106	0.224	111	70-135	5	35	mg/kg	09.26.19 12:21	
o-Xylene	<0.00101	0.101	0.105	104	0.110	109	71-133	5	35	mg/kg	09.26.19 12:21	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		112		70-130	%	09.26.19 12:21
4-Bromofluorobenzene	111		115		70-130	%	09.26.19 12:21

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

Work Order No:

63817

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3333
Midland, TX (432-704-5440) EL Paso, TX (915) 585-3463 Lubbock, TX (806) 756-1296

Houston, NM (505-342-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

WWW.XENODO.COM

Page 7 of 7

Project Manager:	Dan Moir	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:	damoir@ltenv.com mccabe@ltenv.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: _____	

ANALYSIS REQUEST										Work Order Notes
Project Name:		Remediation 2506 (WLP) #1				Turn Around				
Project Number:						Routine ☐				
P.O. Number:		28P-5109				Rush: 24 hr				
Sampler's Name:		Robert McAfee				Due Date:				
SAMPLE RECEIPT		Temp Blank:		Yes	No	Wet Ice:	Yes	No		
Temperature (°C):		7.8				Thermometer ID				
Received Intact:		Yes		No						
Cooler Custody Seals:		Yes		No	N/A	Correction Factor:				
Sample Custody Seals:		Yes		No	N/A	Total Containers:				
Number of Containers										
A 8015)										
PA 0-8021)										
(EPA 300.0)										
FAT starts the day received by the lab. # received by 4:10pm.										

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EP)	BTEX (E)	Chloride	Sample Comments
BH05	S	07/26/17	1015	9'	1	X	X	X	discrete
BH05A	S	09/26/17	1020	11'	1	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 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

analog. Xentec 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 Xentec. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted by Xentec, 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>	9/26/19 11:50			



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 09/26/2019 11:50:00 AM

Work Order #: 638171

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-Nm-007

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	Yes
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 09/26/2019

Checklist reviewed by:

Jessica Kramer

Date: 09/26/2019

Analytical Report 643534

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda 25 Obs Well #001

19-NOV-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

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

Xenco-Dallas (EPA Lab Code: TX01468):

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

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

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

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

Xenco-Carlsbad (LELAP): Louisiana (05092)

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

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

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



19-NOV-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **643534**

Remuda 25 Obs Well #001

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 643534. 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. 643534 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

**Sample Cross Reference 643534****LT Environmental, Inc., Arvada, CO**

Remuda 25 Obs Well #001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS49B	S	11-15-19 15:50	9 ft	643534-001
SW48	S	11-18-19 11:00	0 - 5.5 ft	643534-002
SW49	S	11-18-19 11:30	0 - 5.5 ft	643534-003



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 25 Obs Well #001

Project ID:
Work Order Number(s): 643534

Report Date: 19-NOV-19
Date Received: 11/18/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3107843 BTEX by EPA 8021B

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



Certificate of Analysis Summary 643534

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #001

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Nov-18-19 02:13 pm

Report Date: 19-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	643534-001	643534-002	643534-003			
	<i>Field Id:</i>	FS49B	SW48	SW49			
	<i>Depth:</i>	9- ft	0-5.5 ft	0-5.5 ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Nov-15-19 15:50	Nov-18-19 11:00	Nov-18-19 11:30			
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-18-19 15:11	Nov-18-19 15:11	Nov-18-19 15:11			
	<i>Analyzed:</i>	Nov-18-19 20:59	Nov-18-19 21:18	Nov-18-19 21:38			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101			
Toluene		<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101			
Ethylbenzene		<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101			
m,p-Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00202 0.00202			
o-Xylene		<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101			
Total Xylenes		<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101			
Total BTEX		<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101			
Chloride by EPA 300	<i>Extracted:</i>	Nov-18-19 15:11	Nov-18-19 15:11	Nov-18-19 15:11			
	<i>Analyzed:</i>	Nov-18-19 20:30	Nov-18-19 20:36	Nov-18-19 20:42			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		3130 101	<9.98 9.98	<9.94 9.94			
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-18-19 15:00	Nov-18-19 15:00	Nov-18-19 15:00			
	<i>Analyzed:</i>	Nov-18-19 16:32	Nov-18-19 16:53	Nov-18-19 17:14			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.8 49.8	<50.2 50.2			
Diesel Range Organics (DRO)		<50.0 50.0	<49.8 49.8	<50.2 50.2			
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.8 49.8	<50.2 50.2			
Total GRO-DRO		<50.0 50.0	<49.8 49.8	<50.2 50.2			
Total TPH		<50.0 50.0	<49.8 49.8	<50.2 50.2			

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

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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 643534

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #001

Sample Id: **FS49B**
Lab Sample Id: 643534-001

Matrix: Soil
Date Collected: 11.15.19 15.50

Date Received: 11.18.19 14.13
Sample Depth: 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3107844

Date Prep: 11.18.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3130	101	mg/kg	11.18.19 20.30		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3107867

Date Prep: 11.18.19 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.18.19 16.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.18.19 16.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.18.19 16.32	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.18.19 16.32	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.18.19 16.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	11.18.19 16.32	
o-Terphenyl	84-15-1	102	%	70-135	11.18.19 16.32	



Certificate of Analytical Results 643534

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #001

Sample Id: **FS49B**
Lab Sample Id: 643534-001

Matrix: Soil
Date Collected: 11.15.19 15.50

Date Received: 11.18.19 14.13
Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.18.19 15.11

Basis: Wet Weight

Seq Number: 3107843

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.18.19 20.59	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.18.19 20.59	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.18.19 20.59	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.18.19 20.59	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.18.19 20.59	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.18.19 20.59	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.18.19 20.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.18.19 20.59		
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.18.19 20.59		



Certificate of Analytical Results 643534

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #001

Sample Id: **SW48**
Lab Sample Id: 643534-002

Matrix: Soil
Date Collected: 11.18.19 11.00

Date Received: 11.18.19 14.13
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3107844

Date Prep: 11.18.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	11.18.19 20.36	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3107867

Date Prep: 11.18.19 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.18.19 16.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.18.19 16.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.18.19 16.53	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.18.19 16.53	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.18.19 16.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	11.18.19 16.53	
o-Terphenyl	84-15-1	102	%	70-135	11.18.19 16.53	



Certificate of Analytical Results 643534

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #001

Sample Id: **SW48**
Lab Sample Id: 643534-002

Matrix: Soil
Date Collected: 11.18.19 11.00

Date Received: 11.18.19 14.13
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.18.19 15.11

Basis: Wet Weight

Seq Number: 3107843

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000992	0.000992	mg/kg	11.18.19 21.18	U	1
Toluene	108-88-3	<0.000992	0.000992	mg/kg	11.18.19 21.18	U	1
Ethylbenzene	100-41-4	<0.000992	0.000992	mg/kg	11.18.19 21.18	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.18.19 21.18	U	1
o-Xylene	95-47-6	<0.000992	0.000992	mg/kg	11.18.19 21.18	U	1
Total Xylenes	1330-20-7	<0.000992	0.000992	mg/kg	11.18.19 21.18	U	1
Total BTEX		<0.000992	0.000992	mg/kg	11.18.19 21.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.18.19 21.18		
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.18.19 21.18		



Certificate of Analytical Results 643534

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #001

Sample Id: **SW49**
Lab Sample Id: 643534-003

Matrix: Soil
Date Collected: 11.18.19 11.30

Date Received: 11.18.19 14.13
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3107844

Date Prep: 11.18.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.94	9.94	mg/kg	11.18.19 20.42	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3107867

Date Prep: 11.18.19 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.18.19 17.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.18.19 17.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.18.19 17.14	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.18.19 17.14	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.18.19 17.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.18.19 17.14	
o-Terphenyl	84-15-1	106	%	70-135	11.18.19 17.14	



Certificate of Analytical Results 643534

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #001

Sample Id: **SW49**
Lab Sample Id: 643534-003

Matrix: Soil
Date Collected: 11.18.19 11.30

Date Received: 11.18.19 14.13
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.18.19 15.11

Basis: Wet Weight

Seq Number: 3107843

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.18.19 21.38	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.18.19 21.38	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.18.19 21.38	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.18.19 21.38	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.18.19 21.38	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.18.19 21.38	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.18.19 21.38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.18.19 21.38		
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.18.19 21.38		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 Obs Well #001

Analytical Method: Chloride by EPA 300

Seq Number: 3107844

MB Sample Id: 7690574-1-BLK

Matrix: Solid

LCS Sample Id: 7690574-1-BKS

Prep Method: E300P

Date Prep: 11.18.19

LCSD Sample Id: 7690574-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	254	102	255	102	90-110	0	20	mg/kg	11.18.19 18:56	

Analytical Method: Chloride by EPA 300

Seq Number: 3107844

Parent Sample Id: 643519-001

Matrix: Soil

MS Sample Id: 643519-001 S

Prep Method: E300P

Date Prep: 11.18.19

MSD Sample Id: 643519-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.3	200	215	100	219	102	90-110	2	20	mg/kg	11.18.19 19:14	

Analytical Method: Chloride by EPA 300

Seq Number: 3107844

Parent Sample Id: 643534-003

Matrix: Soil

MS Sample Id: 643534-003 S

Prep Method: E300P

Date Prep: 11.18.19

MSD Sample Id: 643534-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7.27	200	209	101	209	101	90-110	0	20	mg/kg	11.18.19 20:48	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3107867

MB Sample Id: 7690572-1-BLK

Matrix: Solid

LCS Sample Id: 7690572-1-BKS

Prep Method: SW8015P

Date Prep: 11.18.19

LCSD Sample Id: 7690572-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1060	106	1040	104	70-135	2	35	mg/kg	11.18.19 12:06	
Diesel Range Organics (DRO)	<50.0	1000	1210	121	1160	116	70-135	4	35	mg/kg	11.18.19 12:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		132		130		70-135	%	11.18.19 12:06
o-Terphenyl	111		127		119		70-135	%	11.18.19 12:06

Analytical Method: TPH by SW8015 Mod

Seq Number: 3107867

Matrix: Solid

MB Sample Id: 7690572-1-BLK

Prep Method: SW8015P

Date Prep: 11.18.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.18.19 11:45	

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



LT Environmental, Inc.

Remuda 25 Obs Well #001

Analytical Method: TPH by SW8015 Mod

Seq Number: 3107867

Parent Sample Id: 643519-001

Matrix: Soil

MS Sample Id: 643519-001 S

Prep Method: SW8015P

Date Prep: 11.18.19

MSD Sample Id: 643519-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	842	84	956	96	70-135	13	35	mg/kg	11.18.19 14:48	
Diesel Range Organics (DRO)	<50.1	1000	1070	107	1100	110	70-135	3	35	mg/kg	11.18.19 14:48	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		123		70-135	%	11.18.19 14:48
o-Terphenyl	114		116		70-135	%	11.18.19 14:48

Analytical Method: BTEX by EPA 8021B

Seq Number: 3107843

MB Sample Id: 7690575-1-BLK

Matrix: Solid

LCS Sample Id: 7690575-1-BKS

Prep Method: SW5030B

Date Prep: 11.18.19

LCSD Sample Id: 7690575-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.101	101	0.0963	96	70-130	5	35	mg/kg	11.18.19 15:39	
Toluene	<0.000500	0.100	0.0999	100	0.0953	95	70-130	5	35	mg/kg	11.18.19 15:39	
Ethylbenzene	<0.00100	0.100	0.0990	99	0.0946	95	71-129	5	35	mg/kg	11.18.19 15:39	
m,p-Xylenes	<0.00200	0.200	0.209	105	0.200	100	70-135	4	35	mg/kg	11.18.19 15:39	
o-Xylene	<0.00100	0.100	0.104	104	0.0987	99	71-133	5	35	mg/kg	11.18.19 15:39	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		103		102		70-130	%	11.18.19 15:39
4-Bromofluorobenzene	100		107		107		70-130	%	11.18.19 15:39

Analytical Method: BTEX by EPA 8021B

Seq Number: 3107843

Parent Sample Id: 643519-001

Matrix: Soil

MS Sample Id: 643519-001 S

Prep Method: SW5030B

Date Prep: 11.18.19

MSD Sample Id: 643519-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00101	0.101	0.107	106	0.0946	95	70-130	12	35	mg/kg	11.18.19 16:17	
Toluene	<0.000505	0.101	0.105	104	0.0921	92	70-130	13	35	mg/kg	11.18.19 16:17	
Ethylbenzene	<0.00101	0.101	0.103	102	0.0898	90	71-129	14	35	mg/kg	11.18.19 16:17	
m,p-Xylenes	<0.00202	0.202	0.218	108	0.188	94	70-135	15	35	mg/kg	11.18.19 16:17	
o-Xylene	<0.00101	0.101	0.109	108	0.0936	94	71-133	15	35	mg/kg	11.18.19 16:17	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		106		70-130	%	11.18.19 16:17
4-Bromofluorobenzene	113		113		70-130	%	11.18.19 16:17

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:

443534

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 508-3334
 Midland, TX (432) 704-5440 El Paso, TX (915) 685-3443 Lubbock, TX (806) 744-1286
 Hobbs, NM (575) 382-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 448-8800 Tampa, FL (813) 620-2000

www.xenco.com

Page 1 of 1

Project Manager:	Dan Mor	Cell (if different):	Kyle Laird
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:	dmor@ltenv.com kmlaird@xto.com

Program: ☐ UST/ST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund State of Project:	
Reporting Level II ☐	Level III ☐ ST/UST ☐ PRP ☐ Level IV ☐
Deviations: EDD ☐	ADAPT ☐ Other: ☐

Project Name:	Remediation 2506-1411 #001	Turn Around	
Project Number:	2RP-5309	Routine ☐	
P.O. Number:		Rush ☐	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒
	Temperature (°C):	1.8	Thermometer ID	TMM007
	Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.2
	Cooler Custody Seal:	Yes ☒ No ☐ N/A	Total Containers:	3

11/18/2019 1:04 PM

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 8015)	Chloride (EPA 8015)	Sample Comments
FS49B	S	11/15/19	1550	9'	1	X	X	X	
SW48	S	11/18/19	1100	0-5.5'	1	X	X	X	
SW49	S	11/18/19	1130	0-5.5'	1	X	X	X	
									
									

composite

Total	200.7 / 6010	200.8 / 6020:	BRORA 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	BRORA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	1631 / 245.1 / 7470 / 7474 / Hg

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>Robert McAfee</i>	<i>Robert McAfee</i>	11/18/19 14:15			

Analytical Report 647022

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda 25 Obs Well #1

012919039

20-DEC-19

Collected By: Client



1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):

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

Xenco-Dallas (EPA Lab Code: TX01468):

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

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

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

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

Xenco-Carlsbad (LELAP): Louisiana (05092)

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

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

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



20-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **647022**

Remuda 25 Obs Well #1

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 647022. 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. 647022 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 647022

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW50	S	12-18-19 15:00	0 - 5.5 ft	647022-001



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 25 Obs Well #1

Project ID: 012919039
Work Order Number(s): 647022

Report Date: 20-DEC-19
Date Received: 12/19/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3111196 Chloride by EPA 300

Lab Sample ID 647022-001 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: 647022-001.

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

Batch: LBA-3111207 BTEX by EPA 8021B

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



Certificate of Analysis Summary 647022

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id: 012919039

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Dec-19-19 09:41 am

Report Date: 20-DEC-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	647022-001					
	Field Id:	SW50					
	Depth:	0-5.5 ft					
	Matrix:	SOIL					
	Sampled:	Dec-18-19 15:00					
BTEX by EPA 8021B	Extracted:	Dec-19-19 13:21					
	Analyzed:	Dec-19-19 15:39					
	Units/RL:	mg/kg RL					
Benzene		<0.00202 0.00202					
Toluene		0.00226 0.00202					
Ethylbenzene		0.00668 0.00202					
m,p-Xylenes		0.0145 0.00404					
o-Xylene		0.0111 0.00202					
Total Xylenes		0.0256 0.00202					
Total BTEX		0.0345 0.00202					
Chloride by EPA 300	Extracted:	Dec-19-19 14:16					
	Analyzed:	Dec-19-19 14:42					
	Units/RL:	mg/kg RL					
Chloride		1170 50.1					
TPH by SW8015 Mod	Extracted:	Dec-19-19 11:20					
	Analyzed:	Dec-19-19 12:08					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2					
Diesel Range Organics (DRO)		52.6 50.2					
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2					
Total GRO-DRO		52.6 50.2					
Total TPH		52.6 50.2					

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 647022

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **SW50**
Lab Sample Id: 647022-001

Matrix: Soil
Date Collected: 12.18.19 15.00

Date Received: 12.19.19 09.41
Sample Depth: 0 - 5.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3111196

Date Prep: 12.19.19 14.16

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1170	50.1	mg/kg	12.19.19 14.42		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3111216

Date Prep: 12.19.19 11.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	12.19.19 12.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	52.6	50.2	mg/kg	12.19.19 12.08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	12.19.19 12.08	U	1
Total GRO-DRO	PHC628	52.6	50.2	mg/kg	12.19.19 12.08		1
Total TPH	PHC635	52.6	50.2	mg/kg	12.19.19 12.08		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	12.19.19 12.08	
o-Terphenyl	84-15-1	98	%	70-135	12.19.19 12.08	



Certificate of Analytical Results 647022

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **SW50**
Lab Sample Id: 647022-001

Matrix: Soil
Date Collected: 12.18.19 15.00

Date Received: 12.19.19 09.41
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.19.19 13.21

Basis: Wet Weight

Seq Number: 3111207

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.19.19 15.39	U	1
Toluene	108-88-3	0.00226	0.00202	mg/kg	12.19.19 15.39		1
Ethylbenzene	100-41-4	0.00668	0.00202	mg/kg	12.19.19 15.39		1
m,p-Xylenes	179601-23-1	0.0145	0.00404	mg/kg	12.19.19 15.39		1
o-Xylene	95-47-6	0.0111	0.00202	mg/kg	12.19.19 15.39		1
Total Xylenes	1330-20-7	0.0256	0.00202	mg/kg	12.19.19 15.39		1
Total BTEX		0.0345	0.00202	mg/kg	12.19.19 15.39		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	12.19.19 15.39		
1,4-Difluorobenzene	540-36-3	103	%	70-130	12.19.19 15.39		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 Obs Well #1

Analytical Method: Chloride by EPA 300

Seq Number: 3111196

MB Sample Id: 7692886-1-BLK

Matrix: Solid

LCS Sample Id: 7692886-1-BKS

Prep Method: E300P

Date Prep: 12.19.19

LCSD Sample Id: 7692886-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	253	101	253	101	90-110	0	20	mg/kg	12.19.19 12:12	

Analytical Method: Chloride by EPA 300

Seq Number: 3111196

Parent Sample Id: 647019-001

Matrix: Soil

MS Sample Id: 647019-001 S

Prep Method: E300P

Date Prep: 12.19.19

MSD Sample Id: 647019-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	292	201	509	108	514	110	90-110	1	20	mg/kg	12.19.19 13:27	

Analytical Method: Chloride by EPA 300

Seq Number: 3111196

Parent Sample Id: 647022-001

Matrix: Soil

MS Sample Id: 647022-001 S

Prep Method: E300P

Date Prep: 12.19.19

MSD Sample Id: 647022-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	1170	198	1390	111	1370	100	90-110	1	20	mg/kg	12.19.19 14:48	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3111216

MB Sample Id: 7692900-1-BLK

Matrix: Solid

LCS Sample Id: 7692900-1-BKS

Prep Method: SW8015P

Date Prep: 12.19.19

LCSD Sample Id: 7692900-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	913	91	862	86	70-135	6	35	mg/kg	12.19.19 11:49	
Diesel Range Organics (DRO)	<50.0	1000	773	77	743	74	70-135	4	35	mg/kg	12.19.19 11:49	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		112		115		70-135	%	12.19.19 11:49
o-Terphenyl	95		108		104		70-135	%	12.19.19 11:49

Analytical Method: TPH by SW8015 Mod

Seq Number: 3111216

Matrix: Solid

MB Sample Id: 7692900-1-BLK

Prep Method: SW8015P

Date Prep: 12.19.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.19.19 11:29	

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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.

Remuda 25 Obs Well #1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3111216

Parent Sample Id: 647022-001

Matrix: Soil

MS Sample Id: 647022-001 S

Prep Method: SW8015P

Date Prep: 12.19.19

MSD Sample Id: 647022-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.3	1010	890	88	948	95	70-135	6	35	mg/kg	12.19.19 12:08	
Diesel Range Organics (DRO)	52.6	1010	785	73	826	78	70-135	5	35	mg/kg	12.19.19 12:08	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		91		70-135	%	12.19.19 12:08
o-Terphenyl	84		84		70-135	%	12.19.19 12:08

Analytical Method: BTEX by EPA 8021B

Seq Number: 3111207

MB Sample Id: 7692887-1-BLK

Matrix: Solid

LCS Sample Id: 7692887-1-BKS

Prep Method: SW5030B

Date Prep: 12.19.19

LCSD Sample Id: 7692887-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0879	88	0.0918	92	70-130	4	35	mg/kg	12.19.19 13:57	
Toluene	<0.00200	0.100	0.0895	90	0.0941	94	70-130	5	35	mg/kg	12.19.19 13:57	
Ethylbenzene	<0.00200	0.100	0.0883	88	0.0932	93	71-129	5	35	mg/kg	12.19.19 13:57	
m,p-Xylenes	<0.00400	0.200	0.187	94	0.198	99	70-135	6	35	mg/kg	12.19.19 13:57	
o-Xylene	<0.00200	0.100	0.0944	94	0.0999	100	71-133	6	35	mg/kg	12.19.19 13:57	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		101		101		70-130	%	12.19.19 13:57
4-Bromofluorobenzene	116		115		117		70-130	%	12.19.19 13:57

Analytical Method: BTEX by EPA 8021B

Seq Number: 3111207

Parent Sample Id: 647022-001

Matrix: Soil

MS Sample Id: 647022-001 S

Prep Method: SW5030B

Date Prep: 12.19.19

MSD Sample Id: 647022-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0829	82	0.0830	82	70-130	0	35	mg/kg	12.19.19 14:35	
Toluene	0.00226	0.101	0.0844	81	0.0827	80	70-130	2	35	mg/kg	12.19.19 14:35	
Ethylbenzene	0.00668	0.101	0.0816	74	0.0863	79	71-129	6	35	mg/kg	12.19.19 14:35	
m,p-Xylenes	0.0145	0.202	0.183	83	0.169	76	70-135	8	35	mg/kg	12.19.19 14:35	
o-Xylene	0.0111	0.101	0.0898	78	0.0845	73	71-133	6	35	mg/kg	12.19.19 14:35	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		103		70-130	%	12.19.19 14:35
4-Bromofluorobenzene	113		119		70-130	%	12.19.19 14:35

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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: 647022

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 506-3334
 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) 449-0800 Tampa, FL (813) 620-2000

www.xenco.com

Page 1 of 1

Project Manager:	Dan McEl	Bit 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:	dmcc@lthy.com mcarls@lthy.com

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

Project Name:	Remed 25-015 Well #1	Turn Around	
Project Number:	0123/9039	Routine	☐
P.O. Number:	287 287-5309	Rush:	24hr
Sampler's Name:	Robert McElree	Due Date:	

Temperature (°C):		Temp Blank:	☒ Yes ☐ No	Wet Ice:	☒ Yes ☐ No
Received Initial:	1/14	Thermometer ID:	T-NM-003		
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Correction Factor:	-0.2		
Sample Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	1		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8016)	BTEX (EPA 8021)	Chloride (EPA 806.0)
SW50	S	12/8/19	1500	0-5.5'	1	X	X	X

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

Total 200.7 / 6010 200.8 / 6020:

Circle Method(s) and Metal(s) to be analyzed: BRCRA 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: BRCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U

1631 / 245.1 / 7470 / 7471: Hg

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
[Signature]	[Signature]	12/19/19 9:30	[Signature]	[Signature]	12/19/19 0841



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 12/19/2019 09:41:00 AM

Work Order #: 647022

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 12/19/2019

Checklist reviewed by:

Jessica Kramer

Date: 12/20/2019

Analytical Report 647154

**for
LT Environmental, Inc.**

Project Manager: Dan Moir

Remuda 25 Obs Well #1

20-DEC-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

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

Xenco-Dallas (EPA Lab Code: TX01468):

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

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

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

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

Xenco-Carlsbad (LELAP): Louisiana (05092)

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

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

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



20-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **647154**

Remuda 25 Obs Well #1

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 647154. 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. 647154 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

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 647154

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW51	S	12-19-19 11:00	0 - 4 ft	647154-001



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 25 Obs Well #1

Project ID:
Work Order Number(s): 647154

Report Date: 20-DEC-19
Date Received: 12/19/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3111204 Chloride by EPA 300

Lab Sample ID 647154-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 647154-001.

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

Batch: LBA-3111215 BTEX by EPA 8021B

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



Certificate of Analysis Summary 647154

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 25 Obs Well #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Dec-19-19 04:36 pm

Report Date: 20-DEC-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	647154-001					
	Field Id:	SW51					
	Depth:	0-4 ft					
	Matrix:	SOIL					
	Sampled:	Dec-19-19 11:00					
BTEX by EPA 8021B	Extracted:	Dec-19-19 18:00					
	Analyzed:	Dec-20-19 01:51					
	Units/RL:	mg/kg RL					
Benzene		<0.00200 0.00200					
Toluene		<0.00200 0.00200					
Ethylbenzene		<0.00200 0.00200					
m,p-Xylenes		<0.00400 0.00400					
o-Xylene		<0.00200 0.00200					
Total Xylenes		<0.00200 0.00200					
Total BTEX		<0.00200 0.00200					
Chloride by EPA 300	Extracted:	Dec-19-19 17:56					
	Analyzed:	Dec-19-19 19:43					
	Units/RL:	mg/kg RL					
Chloride		70.8 9.98					
TPH by SW8015 Mod	Extracted:	Dec-19-19 17:30					
	Analyzed:	Dec-19-19 21:41					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1					
Diesel Range Organics (DRO)		<50.1 50.1					
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1					
Total GRO-DRO		<50.1 50.1					
Total TPH		<50.1 50.1					

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 647154

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **SW51**
 Lab Sample Id: 647154-001

Matrix: Soil
 Date Collected: 12.19.19 11.00

Date Received: 12.19.19 16.36
 Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.19.19 17.56

Basis: Wet Weight

Seq Number: 3111204

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	70.8	9.98	mg/kg	12.19.19 19.43		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 12.19.19 17.30

Basis: Wet Weight

Seq Number: 3111234

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	12.19.19 21.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	12.19.19 21.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	12.19.19 21.41	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	12.19.19 21.41	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	12.19.19 21.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	12.19.19 21.41	
o-Terphenyl	84-15-1	102	%	70-135	12.19.19 21.41	



Certificate of Analytical Results 647154

LT Environmental, Inc., Arvada, CO

Remuda 25 Obs Well #1

Sample Id: **SW51**
Lab Sample Id: 647154-001

Matrix: Soil
Date Collected: 12.19.19 11.00

Date Received: 12.19.19 16.36
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.19.19 18.00

Basis: Wet Weight

Seq Number: 3111215

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.20.19 01.51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.20.19 01.51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.20.19 01.51	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.20.19 01.51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.20.19 01.51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.20.19 01.51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.20.19 01.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	12.20.19 01.51		
4-Bromofluorobenzene	460-00-4	113	%	70-130	12.20.19 01.51		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda 25 Obs Well #1

Analytical Method: Chloride by EPA 300

Seq Number: 3111204

MB Sample Id: 7692918-1-BLK

Matrix: Solid

LCS Sample Id: 7692918-1-BKS

Prep Method: E300P

Date Prep: 12.19.19

LCSD Sample Id: 7692918-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	255	102	255	102	90-110	0	20	mg/kg	12.19.19 19:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3111204

Parent Sample Id: 647135-010

Matrix: Soil

MS Sample Id: 647135-010 S

Prep Method: E300P

Date Prep: 12.19.19

MSD Sample Id: 647135-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	60.6	199	271	106	272	106	90-110	0	20	mg/kg	12.19.19 21:16	

Analytical Method: Chloride by EPA 300

Seq Number: 3111204

Parent Sample Id: 647154-001

Matrix: Soil

MS Sample Id: 647154-001 S

Prep Method: E300P

Date Prep: 12.19.19

MSD Sample Id: 647154-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	70.8	199	243	87	236	83	90-110	3	20	mg/kg	12.19.19 19:49	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3111234

MB Sample Id: 7692951-1-BLK

Matrix: Solid

LCS Sample Id: 7692951-1-BKS

Prep Method: SW8015P

Date Prep: 12.19.19

LCSD Sample Id: 7692951-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	873	87	879	88	70-135	1	35	mg/kg	12.19.19 20:42	
Diesel Range Organics (DRO)	<50.0	1000	749	75	770	77	70-135	3	35	mg/kg	12.19.19 20:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		118		119		70-135	%	12.19.19 20:42
o-Terphenyl	97		107		107		70-135	%	12.19.19 20:42

Analytical Method: TPH by SW8015 Mod

Seq Number: 3111234

Matrix: Solid

MB Sample Id: 7692951-1-BLK

Prep Method: SW8015P

Date Prep: 12.19.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.19.19 20:22	

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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.

Remuda 25 Obs Well #1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3111234

Parent Sample Id: 647135-008

Matrix: Soil

MS Sample Id: 647135-008 S

Prep Method: SW8015P

Date Prep: 12.19.19

MSD Sample Id: 647135-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	913	91	995	100	70-135	9	35	mg/kg	12.19.19 21:02	
Diesel Range Organics (DRO)	<50.2	1000	800	80	875	88	70-135	9	35	mg/kg	12.19.19 21:02	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		93		70-135	%	12.19.19 21:02
o-Terphenyl	83		90		70-135	%	12.19.19 21:02

Analytical Method: BTEX by EPA 8021B

Seq Number: 3111215

MB Sample Id: 7692919-1-BLK

Matrix: Solid

LCS Sample Id: 7692919-1-BKS

Prep Method: SW5030B

Date Prep: 12.19.19

LCSD Sample Id: 7692919-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0904	90	0.0921	92	70-130	2	35	mg/kg	12.20.19 00:09	
Toluene	<0.00200	0.100	0.0909	91	0.0867	87	70-130	5	35	mg/kg	12.20.19 00:09	
Ethylbenzene	<0.00200	0.100	0.0878	88	0.0782	78	71-129	12	35	mg/kg	12.20.19 00:09	
m,p-Xylenes	<0.00400	0.200	0.184	92	0.160	80	70-135	14	35	mg/kg	12.20.19 00:09	
o-Xylene	<0.00200	0.100	0.0944	94	0.0838	84	71-133	12	35	mg/kg	12.20.19 00:09	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		102		104		70-130	%	12.20.19 00:09
4-Bromofluorobenzene	110		117		118		70-130	%	12.20.19 00:09

Analytical Method: BTEX by EPA 8021B

Seq Number: 3111215

Parent Sample Id: 647154-001

Matrix: Soil

MS Sample Id: 647154-001 S

Prep Method: SW5030B

Date Prep: 12.19.19

MSD Sample Id: 647154-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0935	93	0.0949	94	70-130	1	35	mg/kg	12.20.19 00:47	
Toluene	<0.00201	0.101	0.0953	94	0.0958	95	70-130	1	35	mg/kg	12.20.19 00:47	
Ethylbenzene	<0.00201	0.101	0.0934	92	0.0925	92	71-129	1	35	mg/kg	12.20.19 00:47	
m,p-Xylenes	<0.00402	0.201	0.197	98	0.193	96	70-135	2	35	mg/kg	12.20.19 00:47	
o-Xylene	<0.00201	0.101	0.0999	99	0.0984	97	71-133	2	35	mg/kg	12.20.19 00:47	

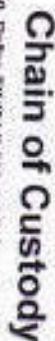
Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		105		70-130	%	12.20.19 00:47
4-Bromofluorobenzene	119		122		70-130	%	12.20.19 00:47

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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



194754

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 599-3535
Phoenix, AZ (480) 395-0900 El Paso, TX (910) 585-3443 Lubbock, TX (806) 794-1298
Midland, TX (432) 704-5444

Page 1 of 1

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

[illegible]

TAT starts the day received by the	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E)	BTEX (E)	Chloride	Sample Comments
SW51	S	12/1/91	11:00	0-4'	1	X	X	X	comp. ok

[illegible]

Circle Method(s) and Metal(s) to be analyzed

TCLP/SPLP 6010: BRCBA Sb As Ba Be Bi Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Sg Ag SiO₂ Na Sr Ti Sn U V Zn

Signature of this document and relinquishment of samurai sword, etc. (1.1.1)

1631 / 245.1 / 7470 / 7471 : HG

Mexico. Mexico 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 the client. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Mexico, but not analyzed. These terms will be enforced unless previously negotiated and distinguished by (Signature)

Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	12/19/19 14:34			

Released Date: 02/21/2021 09:01:34 AM



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 12/19/2019 04:36:00 PM

Work Order #: 647154

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 12/19/2019

Checklist reviewed by:

Jessica Kramer

Date: 12/20/2019