

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	NDHR1917160774
District RP	1RP-5562
Facility ID	
Application ID	pDHR1917160479

Release Notification

Responsible Party

Responsible Party	XTO Energy	OGRID	5380
Contact Name	Kyle Littrell	Contact Telephone	432-221-7331
Contact email	Kyle_Littrell@xtoenergy.com	Incident #	(assigned by OCD)
Contact mailing address	522 W. Mermod, Carlsbad, NM 88220		

Location of Release Source

Latitude 32.583525 Longitude -103.326422
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	EMSU B #865	Site Type	Production injection well riser
Date Release Discovered	5/28/2019	API# (if applicable)	30-025-04216

Unit Letter	Section	Township	Range	County
N	11	20S	36E	Lea

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls)	0.09	Volume Recovered (bbls)	0
☒ Produced Water	Volume Released (bbls)	33.39	Volume Recovered (bbls)	5
	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

After having been shut in due to facility work, the well and injection line were returned to service. A valve on the injection line riser failed due to age and fatigue and fluids were released to the riser pad, lease road, and pasture soils. A vacuum truck recovered free fluids. Additional third party resources have been retained to assist with remediation.

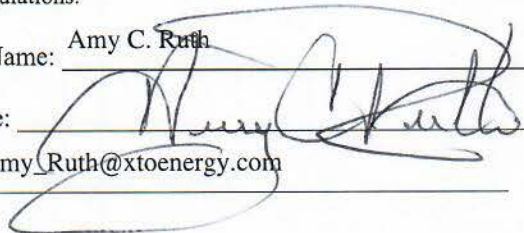
State of New Mexico
Oil Conservation Division

Incident ID	NDHR1917160774
District RP	1RP-5562
Facility ID	
Application ID	pDHR1917160479

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 EMNRD-OCD-District1 spills (NMOCD) on 5/28/2019.	

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>Amy C. Ruth</u>	Title: <u>SH&E Coordinator</u>
Signature: 	Date: <u>6/7/2019</u>
email: <u>Amy_Ruth@xtoenergy.com</u>	Telephone: <u>575-689-3380</u>
<u>OCD Only</u>	
Received by: <u>Dylan Rose-Coss</u>	Date: <u>06/20/2019</u>

Incident ID	NDHR1917160774
District RP	1RP-5562
Facility ID	
Application ID	pDHR1917160479

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?	<50 _____ (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	NDHR1917160774
District RP	1RP-5562
Facility ID	
Application ID	pDHR1917160479

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: 03/25/2020
email: Kyle_Littrell@xtoenergy.com Telephone: (432) 221-7331

OCD Only

Received by: Cristina Eads Date: 03/25/2020

Incident ID	NDHR1917160774
District RP	1RP-5562
Facility ID	
Application ID	pDHR1917160479

Remediation Plan

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

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

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

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

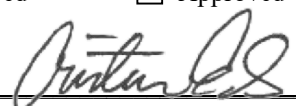
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public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

Printed Name: Kyle Littrell Title: SH&E Supervisor
Signature:  Date: 03/25/2020
email: Kyle_Littrell@xtoenergy.com Telephone: (432) 221-7331

OCD Only

Received by: Cristina Eads Date: 03/25/2020

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

Signature:  Date: Environmental Specialist



LT Environmental, Inc.

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

March 25, 2020

New Mexico Oil Conservation Division
District I
1625 North French Drive
Hobbs, New Mexico 88240

**RE: Remediation Work Plan
EMSU B #865
Remediation Permit Number 1RP-5562
Incident Number NDHR1917160774
Lea County, New Mexico**

To Whom It May Concern:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Remediation Work Plan detailing remediation activities completed to date and proposed remedial actions to address residual impacted soil at the EMSU B #865 (Site) resulting from a release of produced water and crude oil at the Site. The Site is located in Unit N, Section 11, Township 20 South, Range 36 East, in Lea County, New Mexico (Figure 1). This Remediation Work Plan summarizes remediation activities and is designed to address remaining impacts to soil by installing a 20-mil impermeable liner in the subsurface.

RELEASE BACKGROUND

On May 28, 2019, a valve on the injection line riser failed due to age and fatigue causing a release of approximately 33.39 barrels (bbls) of produced water and 0.09 barrels bbls of crude oil. The release occurred on the riser pad located on private land and flowed southeast along the lease road, covering approximately 6,706 square feet. A hydro-vacuum truck was dispatched to the Site to recover free fluids; approximately 5 bbls of produced water were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on June 7, 2019 and was subsequently assigned Remediation Permit Number (RP) 1RP-5562 and Incident Number NDHR1917160774.

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be approximately less than 50 feet below ground surface (bgs) based on the nearest groundwater well data. The nearest permitted groundwater well with depth to water data is United States Geological Survey (USGS) well 323452103185901, located approximately 2,851 feet east of the Site. The groundwater well has



a depth to groundwater of approximately 31 feet bgs and a total depth of approximately 65 feet bgs. There is a New Mexico Office of the State Engineer (NMOSE) groundwater well that is closer to the Site, L 10251; however, depth to groundwater data is not available for this groundwater well. The groundwater well is approximately 6 feet lower in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is a freshwater pond located approximately 3,575 feet east of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a low potential karst area.

CLOSURE CRITERIA

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

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

PRELIMINARY SOIL SAMPLING ACTIVITIES

On June 6, 2019, LTE inspected the Site to evaluate the release extent and collect preliminary soil samples utilizing visual observations and information from the Form C-141. LTE personnel collected two preliminary soil samples (SS01 and SS02) within the release extent from a depth of approximately 0.5 feet bgs to assess surficial soil within the release extent. The release extent and preliminary soil sample locations were mapped using a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.

Soil samples were screened for volatile aromatic hydrocarbons and chloride using a calibrated photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Each soil sample was placed directly into pre-cleaned glass jars, labeled with location, date, time, sampler, and method of analysis, and immediately placed on ice. The samples were transported to Xenco Laboratories (Xenco) in Carlsbad, New Mexico, at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures for analysis of BTEX by United States Environmental Protection Agency (EPA) Method 8021B, TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) by EPA Method 8015M/D, and chloride by EPA Method 300.0. Photo documentation of the release was conducted, and a photographic log of the Site and the remediation work is included as Attachment 1.



Laboratory analytical results indicated benzene, BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria in preliminary soil samples SS01 and SS02; however, visible staining was observed within the release extent. Based on the unrecovered volume of produced water (28.39 bbls), visible staining, and field screening results, further site assessment activities appeared warranted. The laboratory analytical report is included in Attachment 2.

Further delineation and remediation efforts were postponed while ensuring access to the site was approved by the private landowner. Per 19.15.29.12.B.(1) NMAC, an extension for submission of a Remediation Plan or Closure Request was approved on August 27, 2020.

After confirming approval for access from the private landowner, LTE personnel returned to the Site on June 25 and 26, 2019, to conduct further site assessment via delineation soil sample collection. LTE personnel advanced six boreholes (BH01 through BH06) via a stainless-steel hand auger within the release extent to confirm the presence or absence of impacts to soil at depth. Boreholes BH01 through BH06 were collected at depths ranging from approximately 1 foot to 8 feet bgs. Two discrete soil samples were collected from each borehole based on field screening results for volatile aromatic hydrocarbons and chloride. The delineation borehole soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Carlsbad, New Mexico. Soil sample locations are depicted on Figure 3. The lithologic/soil sampling logs for the boreholes are included in Attachment 3.

Laboratory analytical results for borehole soil samples BH01A, collected at approximately 8 feet bgs, BH02A collected at approximately 7 feet bgs, BH04 collected at approximately 2 feet bgs, and BH03/BH03A collected at approximately 3 and 4 feet bgs, respectively, indicated concentrations of chloride exceeded the Closure Criteria. In addition, laboratory analytical results for borehole soil sample BH01A indicated concentrations of TPH exceeded Closure Criteria. Laboratory analytical results for borehole soil samples BH05 and BH06 indicated concentrations of benzene, BTEX, TPH, and chloride were below Closure Criteria at all sampled depths and excavation along the lease road did not appear to be warranted. The delineation borehole soil samples indicated impacts to soil within the release extent up to 8 feet bgs. Based on the laboratory analytical results and visual observations, excavation at the Site, near the riser right-of-way (ROW) appeared to be warranted. Analytical results are summarized on Table 1 and laboratory analytical reports are included in Attachment 2.

EXCAVATION ACTIVITIES

Between August 19 and September 4, 2019, LTE personnel were onsite to conduct excavation activities in the vicinity of boreholes BH01 through BH04. To direct all excavation activities, LTE screened soil samples using a PID and Hach® chloride QuanTab® test strips. The excavation extended to approximately 4.5 feet bgs in most areas. Soil in the vicinity of borehole BH02 was excavated to approximately 8.5 feet bgs, as directed by the laboratory analytical results from the initial delineation activities.



Following removal of impacted soil, LTE collected 5-point composite confirmation soil samples every 200 square feet from the sidewalls and floor of the excavations. The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag, and homogenizing the samples by thoroughly mixing. The excavation soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Carlsbad, New Mexico. LTE personnel collected nine floor samples, FS01 through FS09, at depths of approximately 4.5 feet and 8.5 feet bgs, and twelve sidewall samples, SW01 through SW12, at depths ranging from the ground surface to approximately 4.5 feet and 8.5 feet bgs. The excavation soil sample locations are presented on Figure 4.

Laboratory analytical results indicate TPH concentrations exceeded Closure Criteria in confirmation floor soil samples FS04 and FS05 and sidewall soil samples SW02, SW03, SW06, and SW07. TPH concentrations exceeding the Closure Criteria ranged between 101 mg/kg (FS04) and 368 mg/kg (FS05). Floor samples FS04 and FS05 were collected near two undergoing waterlines located 5 to 6 feet bgs. Sidewall sample SW06 was collected near an underground electrical line and sidewall sample SW07 was collected near the underground water line and the riser equipment.

In addition, laboratory analytical results indicated chloride concentrations exceeded Closure Criteria in confirmation floor soil samples FS01 and FS06 and sidewall soil samples SW01 and SW06. Chloride concentrations exceeding Closure Criteria ranged from 698 mg/kg (SW01) to 1,180 mg/kg (SW06). Floor sample FS01 was collected in between a water line located approximately 6 feet bgs and a high-pressure pipeline approximately 4 feet bgs. The excavation area around floor sample FS06 was limited by the underground water line and the riser equipment at surface. The excavation around sidewall sample SW01 was limited by the high-pressure pipeline.

Though laboratory analytical results indicated there was remaining impacted soil, XTO safety policy restricts soil-disturbing activities within 2 feet of any on-site production equipment and pipelines. Excavation was completed to the extent possible near floor samples FS01, FS04, FS05, and FS06 as well as sidewall samples SW01, SW06, and SW07 without compromising the structural integrity of the active production equipment and pipelines.

The excavation measured an estimated 2,775 square feet and an estimated 527 cubic yards of impacted soil was removed from the Site. Laboratory analytical results indicated benzene, BTEX, TPH, and chloride concentrations were below the Closure Criteria in confirmation soil samples FS02, FS03, FS07 through FS09, SW04, SW05, and SW08 through SW12 collected from the floor and sidewalls of the excavation.



DELINEATION ACTIVITIES

On September 4, 2019, LTE conducted pothole sampling activities to delineate the lateral and vertical extent of impacted soil remaining at the Site that could not be remediated with mechanical equipment or a hydro-vacuum truck due to the presence of production equipment. This portion of the release area was located between riser equipment, electrical boxes, numerous underground pipelines and other pieces of production equipment. Photographic documentation of this area is included in the photographic log in Attachment 1.

LTE personnel collected delineation potholes PH01 and PH02 via at track hoe in the vicinity of the pad and borehole BH02, respectively (Figure 3). Two soil samples were collected from pothole PH01 at depths of approximately 3 feet and 4 feet bgs. Three soil samples were collected from pothole PH02 at depths of approximately 6 feet, 18 feet, and 19 feet bgs. Soil from each discrete soil sample was field screened using a PID and Hach® chloride QuanTab® test strips. The delineation soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Carlsbad, New Mexico.

Laboratory analytical results indicated TPH concentrations exceeded the Closure Criteria in pothole soil samples PH02 (202 mg/kg) and PH02A (348 mg/kg), collected at depths of 18 feet and 19 feet bgs, respectively. Laboratory analytical results indicated chloride concentrations in soil exceeded the Closure Criteria in pothole PH01 collected at approximately 3 feet bgs, and pothole PH02/PH02A collected at approximately 6 feet and 18 feet bgs, respectively. The chloride concentrations ranged between 629 mg/kg (PH02A) and 843 mg/kg (PH01). Laboratory analytical results are summarized in Table 1, and the laboratory analytical reports are included in Attachment 2.

During the delineation and site assessment, environmental drilling appeared to be warranted. A second extension was approved on November 26, 2019 per 19.15.29.12.B.(1) NMAC by the NMOCD District I office, extending the deadline to March 26, 2020.

Based on the elevated TPH and chloride concentrations from soil samples collected within and around the release area, LTE personnel oversaw the advancement of six boreholes (BH07 through BH12) from January 15 to February 6, 2020. The boreholes were advanced utilizing a truck-mounted sonic drill rig. Borehole BH07 was located within the release extent and in the immediate vicinity of pothole PH02. Boreholes BH08 through BH12 were drilled along the perimeter of the release extent to laterally delineate the release extent. Due to the presence of loose sand within the pasture on the immediate western and northern sides of the riser, the sonic drill rig was limited to those areas where boreholes were advanced in order to assess the lateral and vertical extents of soil impacts.

Soil from each discrete soil sample was field screened using a PID and Hach® chloride QuanTab® test strips. The delineation soil samples were collected, handled, and analyzed as described



above and submitted to Xenco in Carlsbad, New Mexico. Borehole locations are depicted on Figure 3. The lithologic/soil sampling logs for the boreholes are included in Attachment 3.

Borehole BH09 was drilled to approximately 50 feet bgs in order to confirm depth to groundwater at the Site. LTE waited more than 24 hours for the borehole to equilibrate, and then measured the static groundwater level in borehole BH09 on January 11, 2020. Depth to groundwater at the Site was determined to be 41.60 feet bgs. After the depth to groundwater level was measured, LTE personnel oversaw the proper abandonment of borehole BH09 utilizing hydrated bentonite chips.

Laboratory analytical results for the additional delineation soil samples from boreholes BH07 through BH12 indicated benzene, BTEX, and TPH concentrations were compliant with the Closure Criteria, with the exception of borehole BH07, collected at approximately 5 feet bgs, which contained soil with TPH concentrations exceeding Closure Criteria. Chloride concentrations exceeding the Closure Criteria in soil from the six boreholes ranged from 606 mg/kg from borehole BH07 at approximately 31 feet bgs (BH07F) to 1,340 mg/kg from borehole BH08 at approximately 19 feet bgs (BH08D).

The borehole samples delineate the remaining impacts to the extent practical given the existing active infrastructure and unconsolidated surrounding pasture composition, both of which restricted access for a sonic drill rig. The trackhoe could not advance deep enough in the northern and eastern pasture to successfully delineate impacted material. The release is vertically delineated by delineation borehole BH07 at approximately 35 feet bgs and is laterally delineated to the south by delineation borehole BH12, and to the west by delineation boreholes BH09 and BH10. Borehole BH11 was drilled as the north and east delineation borehole. However, laboratory analytical results indicate at 10 feet, 18 feet, 19 feet, and 31 feet bgs soil contains chloride concentrations that exceed Closure Criteria. The borehole and delineation soil sample locations are depicted on Figure 3 and soil sampling logs are included in Attachment 3.

PROPOSED REMEDIATION WORK PLAN

Impacted soil associated with RP Number 1RP-5562 was excavated from the release area to a depth of approximately 4.5 feet throughout with a deeper bottom, approximately 8.5 feet bgs, on the north side of the northwest-southeast running high-pressure pipeline. Approximately 527 cubic yards of impacted soil were excavated from the Site; however, residual impacted soil was left in place below approximately 4.5 feet bgs in the central portion of the excavation. An estimated 3,225 cubic yards of impacted soil remain in place, assuming a maximum 35-foot depth based on delineation soil samples collected from boreholes BH07 through BH12.

Delineation and excavation soil sampling provided full vertical delineation of the remaining impacted soil. There appears to be limited impacted soil containing TPH exceeding Closure Criteria from 18 feet to 19 feet bgs, as documented in PH02 (TPH concentrations of 202 mg/kg



District I
Page 7

and 348 mg/kg), however, additional sampling nearby in BH07 did not identify similar concentrations. Impacted soil containing chloride exceeding Closure Criteria to a depth of 31 feet bgs is observed in BH07, BH08, and BH11 (with chloride concentrations exceeding or near 1,000 mg/kg). TPH and chloride are delineated vertically at 35 feet bgs in BH07.

To achieve full lateral delineation, XTO proposes to drill, at minimum, two boreholes to the north and east of borehole BH11, which will provide lateral delineation to the north and east of the release extent. The proposed borehole locations are depicted on Figure 5. These boreholes will be drilled with a track-mounted drill rig, a direct push or hollow-stem auger, that will be able to reach the proposed locations in the unconsolidated pasture composition.

Due to the nature of the release (produced water containing chloride), extent of contamination in the subsurface (chloride impacts to approximately 35 feet bgs and TPH impacts to 5 feet bgs), and lack of access by active subsurface pipelines and production equipment, LTE proposes additional excavation and installation of a liner to mitigate further impacts into the subsurface. As such, XTO proposes to excavate TPH impacted soil to 5 feet bgs near borehole BH07 and chloride impacted soil to 4 feet bgs near boreholes BH08 and BH11. Additionally, the excavation sidewall will be extended near sidewall samples SW02 and SW03 (Figure 5). LTE will oversee excavation activities to remediate impacted soil as indicated by visual observations and field screening results. Following removal of impacted soil, LTE collected 5-point composite soil samples at a frequency of every 200 square feet from the sidewalls and floor of the excavation.

Following the additional excavation, XTO requests to install a 20-mil impermeable liner over the deeper impacted soil to mitigate further impacts into the subsurface. The liner will be installed at approximately 4 feet bgs and backfilled with non-waste containing soil or caliche, depending on the location. The liner will be installed in the entire excavation extent. XTO will complete the excavation and liner installation within 90 days of the date of approval of this work plan by NMOCD.

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

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink, appearing to read 'T Morrissey'.

Tacoma Morrissey
Project Geologist

A handwritten signature in black ink, appearing to read 'Ashley L. Ager'.

Ashley L. Ager, P.G.
Senior Geologist



District I
Page 8

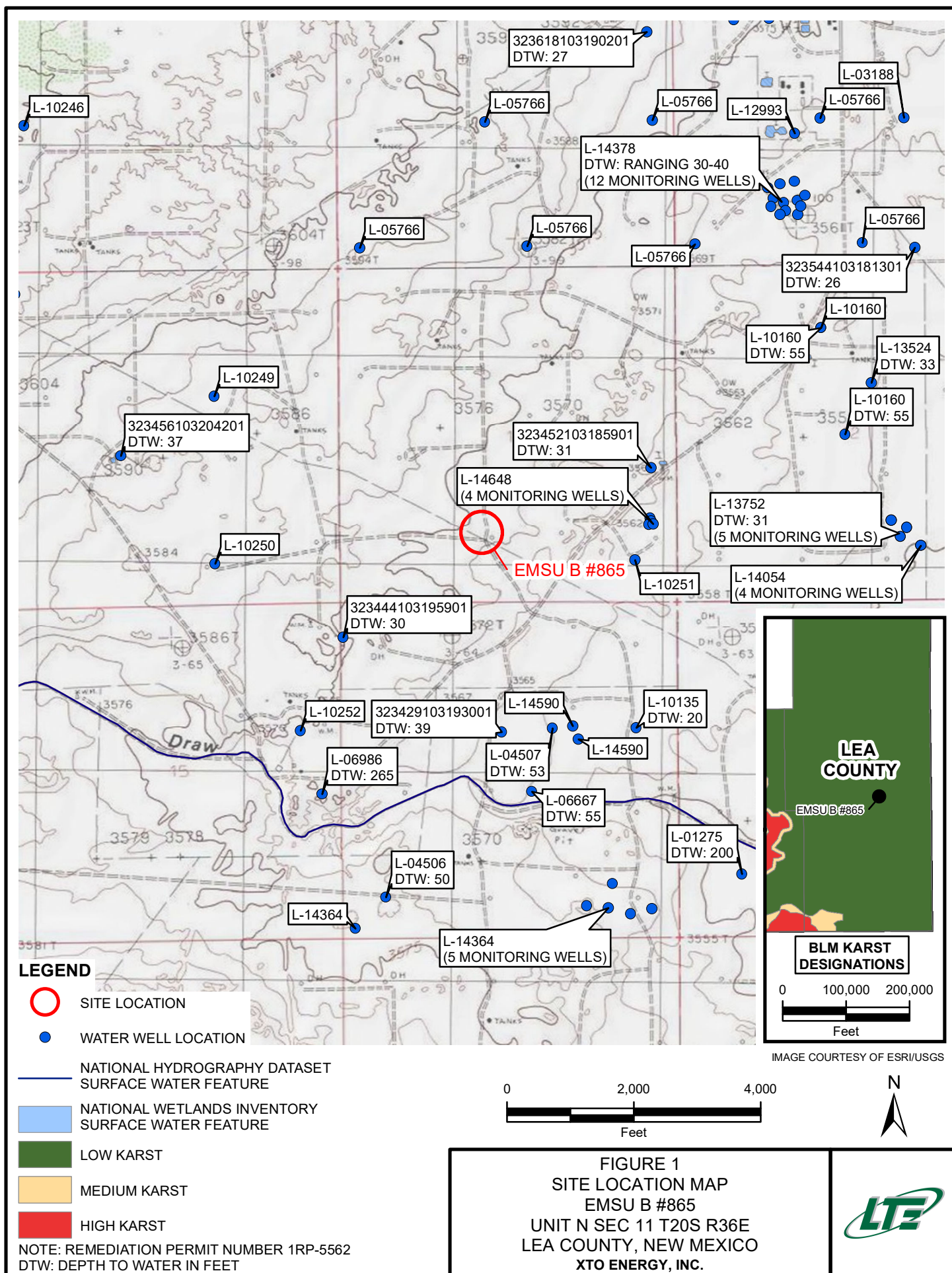
cc: Kyle Littrell, XTO
Klein Ranch

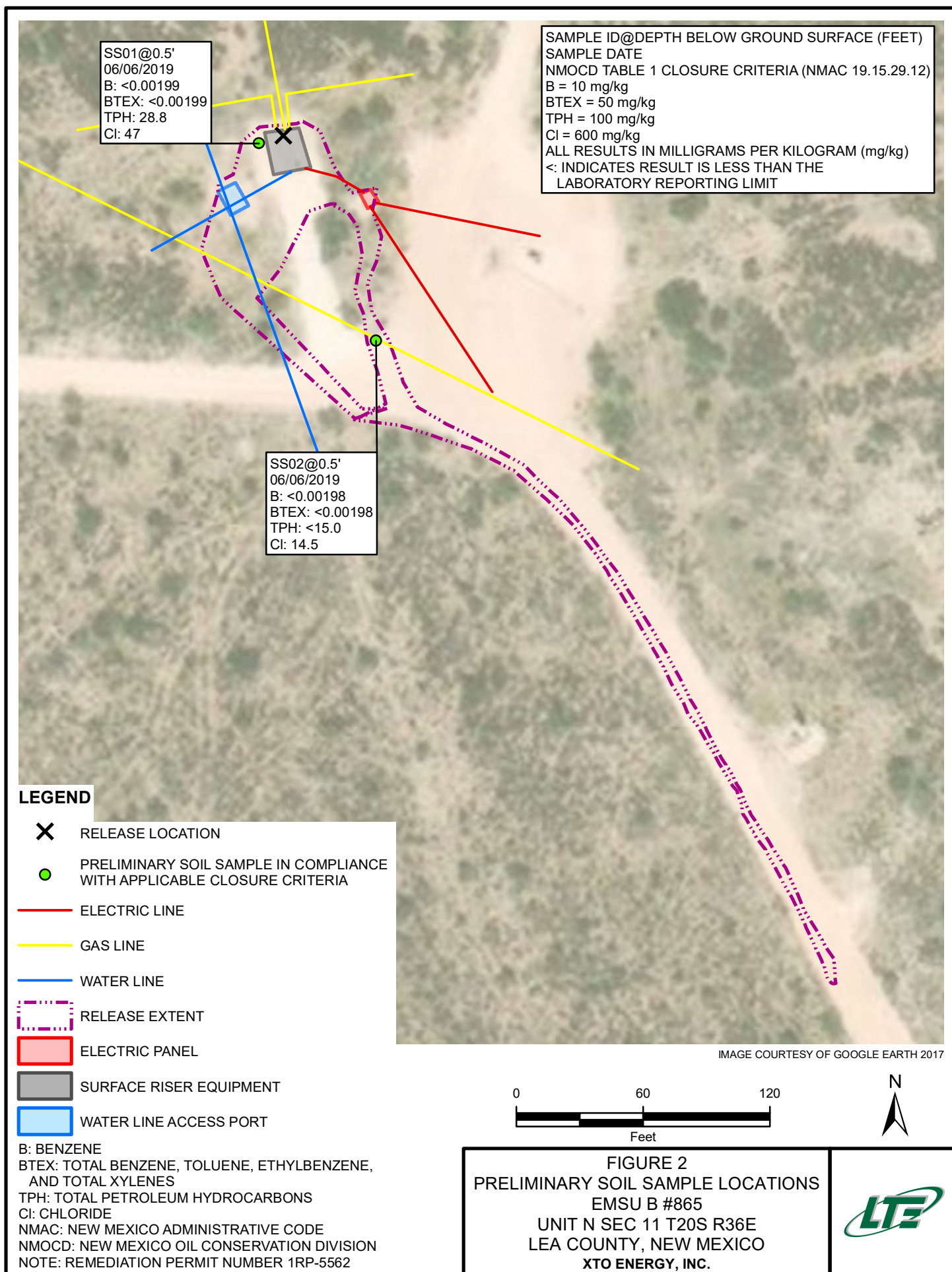
Attachments:

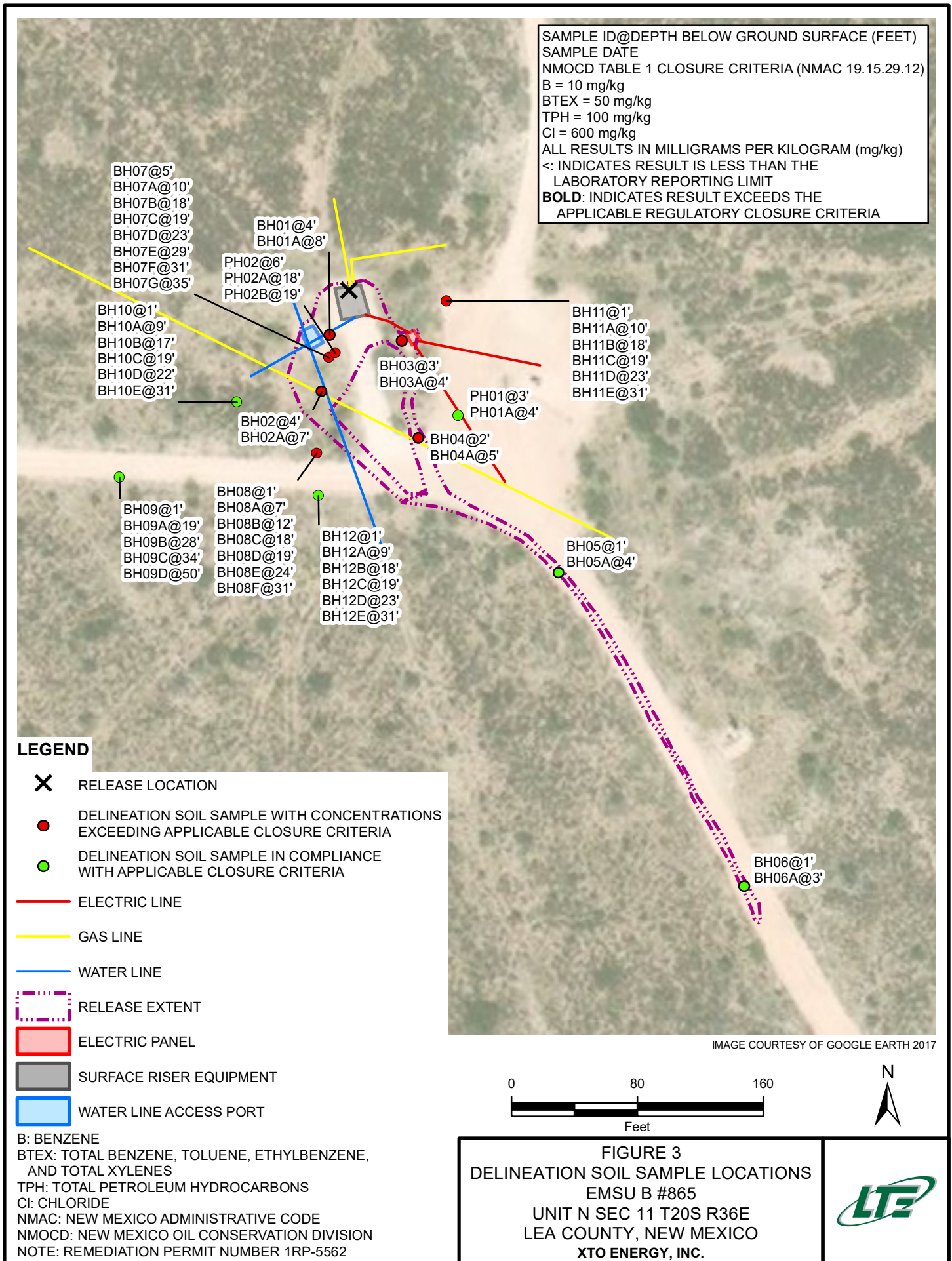
Figure 1 Site Location Map
Figure 2 Preliminary Soil Sample Locations
Figure 3 Delineation Soil Sample Locations
Figure 4 Excavation Soil Sample Locations
Figure 5 Proposed Excavation and Delineation Locations
Table 1 Soil Analytical Results
Attachment 1 Photographic Log
Attachment 2 Laboratory Analytical Reports
Attachment 3 Lithologic/Soil Sampling Logs

FIGURES









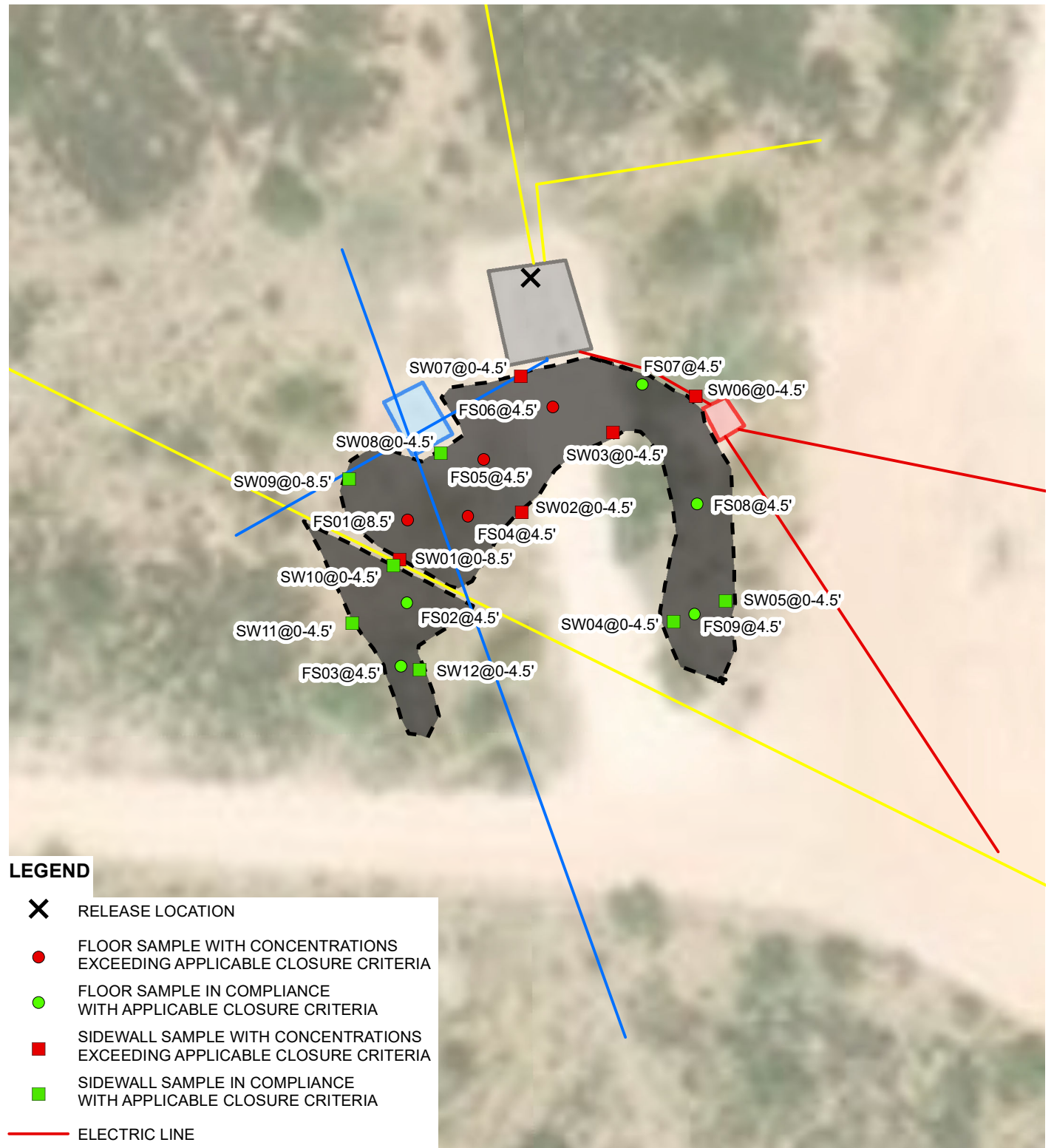


IMAGE COURTESY OF GOOGLE EARTH 2017

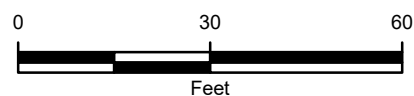
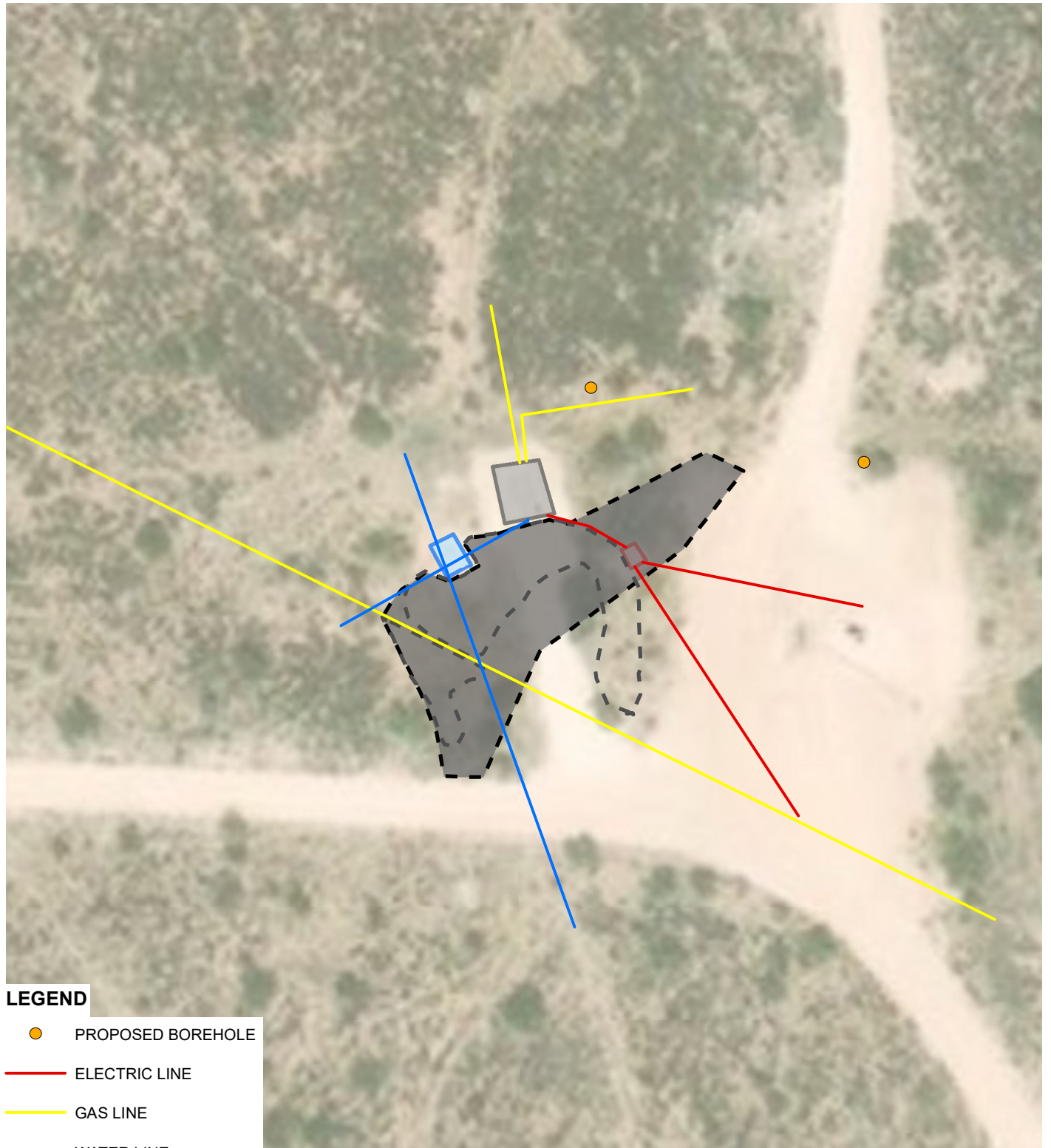


FIGURE 4
EXCAVATION SOIL SAMPLE LOCATIONS
 EMSU B #865
 UNIT N SEC 11 T20S R36E
 LEA COUNTY, NEW MEXICO
 XTO ENERGY, INC.



**LEGEND**

- PROPOSED BOREHOLE
- ELECTRIC LINE
- GAS LINE
- WATER LINE
- PROPOSED EXCAVATION EXTENT
- ELECTRIC PANEL
- SURFACE RISER EQUIPMENT
- WATER LINE ACCESS PORT
- EXCAVATION EXTENT

NOTE: REMEDIATION PERMIT
NUMBER 1RP-5562

IMAGE COURTESY OF GOOGLE EARTH 2017

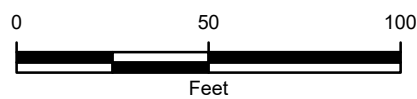


FIGURE 5
PROPOSED EXCAVATION AND DELINEATION LOCATIONS
 EMSU B #865
 UNIT N SEC 11 T20S R36E
 LEA COUNTY, NEW MEXICO
 XTO ENERGY, INC.



TABLES



TABLE 1
SOIL ANALYTICAL RESULTS

EMSU B #865
REMEDIATION PERMIT NUMBER 1RP-5562
LEA 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)
NMOCB Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
SS01	0.5	06/06/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	28.8	<15.0	28.8	28.8	46.7
SS02	0.5	06/06/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	14.5
BH01	4	06/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	41.9	19.3	41.9	61.2	576
BH01A	8	06/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	88.0	28.0	88.0	116	1,040
BH02	4	06/25/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	557
BH02A	7	06/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	847
BH03	3	06/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	746
BH03A	4	06/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	798
BH04	2	06/25/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	916
BH04A	5	06/25/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	192
BH05	1	06/26/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	228
BH05A	4	06/26/2019	<0.00203	<0.00203	<0.00203	<0.00203	<0.00203	<15.0	<15.0	<15.0	<15.0	<15.0	12.3
BH06	1	06/26/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	12.9
BH06A	3	06/26/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	192
BH07	5	01/15/2020	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	<49.8	320	96.3	320	416	199
BH07A	10	01/15/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	298
BH07B	18	01/15/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.3	<50.3	<50.3	<50.3	<50.3	901
BH07C	19	01/15/2020	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	<50.2	<50.2	<50.2	<50.2	<50.2	777
BH07D	23	01/15/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	787
BH07E	29	01/15/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	188
BH07F	31	01/15/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	606
BH07G	35	02/06/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	394
BH08	1	01/15/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	268

TABLE 1
SOIL ANALYTICAL RESULTS

EMSU B #865
REMEDIATION PERMIT NUMBER 1RP-5562
LEA 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)
NMOCB Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
BH08A	7	01/15/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	1,240
BH08B	12	01/15/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,310
BH08C	18	01/15/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	1,330
BH08D	19	01/15/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,340
BH08E	24	01/15/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	1,070
BH08F	31	01/15/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	696
BH09	1	01/16/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<4.96
BH09A	19	01/16/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	309
BH09B	28	01/16/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.4
BH09C	34	01/16/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24.7
BH09D	50	01/16/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<4.95
BH10	1	01/17/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	9.13
BH10A	9	01/17/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	68.9
BH10B	17	01/17/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	802
BH10C	19	01/17/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	418
BH10D	22	01/17/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	46.0
BH10E	31	01/17/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	8.88
BH11	1	01/17/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	<5.02
BH11A	10	01/17/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.8	<49.8	<49.8	<49.8	<49.8	1,160
BH11B	18	01/17/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	1,210
BH11C	19	01/17/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	1,140
BH11D	23	01/17/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	40.5
BH11E	31	01/17/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	616

TABLE 1
SOIL ANALYTICAL RESULTS

EMSU B #865
REMEDIATION PERMIT NUMBER 1RP-5562
LEA 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)
NMOCDC Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
BH12	1	01/17/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	77.4
BH12A	9	01/17/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	<49.8	42.6
BH12B	18	01/17/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	119
BH12C	19	01/17/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	153
BH12D	23	01/17/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	31.0
BH12E	31	01/17/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	38.7
PH01	3	08/28/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<24.9	58.2	<24.9	58.2	58.2	843
PH01A	4	08/28/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<25.0	<25.0	<25.0	<25.0	<25.0	599
PH02	6	09/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<25.1	<25.1	<25.1	<25.1	<25.1	700
PH02A	18	09/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<25.1	202	<25.1	202	202	629
PH02B	19	09/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<25.0	348	<25.0	348	348	491
FS01	8.5	09/04/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<25.0	<25.0	<25.0	<25.0	<25.0	880
FS02	4.5	09/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<25.0	<25.0	<25.0	<25.0	<25.0	527
FS03	4.5	09/04/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<24.9	<24.9	<24.9	<24.9	<24.9	185
FS04	4.5	09/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<24.9	65.2	35.8	65.2	101	458
FS05	4.5	09/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<25.0	239	129	239	368	539
FS06	4.5	09/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<24.9	55.3	37.7	55.3	93.0	708
FS07	4.5	09/04/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<24.9	<24.9	<24.9	<24.9	<24.9	463
FS08	4.5	09/04/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<25.0	<25.0	<25.0	<25.0	<25.0	278
FS09	4.5	09/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<24.9	<24.9	<24.9	<24.9	<24.9	12.0
SW01	0 - 8.5	09/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<24.9	<24.9	<24.9	<24.9	<24.9	698
SW02	0 - 4.5	09/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<24.9	99.5	42.1	99.5	142	524
SW03	0 - 4.5	09/04/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<25.0	78.3	45.1	78.3	123	450

**TABLE 1
SOIL ANALYTICAL RESULTS**

**EMSU B #865
REMEDATION PERMIT NUMBER 1RP-5562
LEA COUNTY, NEW MEXICO
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
SW04	0 - 4.5	09/04/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<25.0	<25.0	<25.0	<25.0	<25.0	46.6
SW05	0 - 4.5	09/04/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<24.9	<24.9	<24.9	<24.9	<24.9	303
SW06	0 - 4.5	09/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<25.0	70.2	38.5	70.2	109	1,180
SW07	0 - 4.5	09/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<25.0	123	74.1	123	197	343
SW08	0 - 4.5	09/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<24.9	48.8	30.5	48.8	79.3	319
SW09	0 - 8.5	09/04/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<25.0	<25.0	<25.0	<25.0	<25.0	183
SW10	0 - 4.5	09/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<25.0	<25.0	<25.0	<25.0	<25.0	454
SW11	0 - 4.5	09/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<24.9	<24.9	<24.9	<24.9	<24.9	185
SW12	0 - 4.5	09/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<24.9	<24.9	<24.9	<24.9	<24.9	144

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

ORO - motor oil range organics

NMAC - New Mexico Administrative Code

NMOCD - New Mexico Oil Conservation Division

NE - not established

TPH - total petroleum hydrocarbons

Bold - indicates result exceeds the applicable regulatory standard

< - indicates result is below laboratory reporting limits

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

NA- Not Analyzed

ATTACHMENT 1: PHOTOGRAPHIC LOG



PHOTOGRAPHIC LOG



Photograph 1: View of release along road facing south.



Photograph 2: View of release around equipment facing west.



Photograph 3: View of hydrovac excavation around riser equipment facing north.



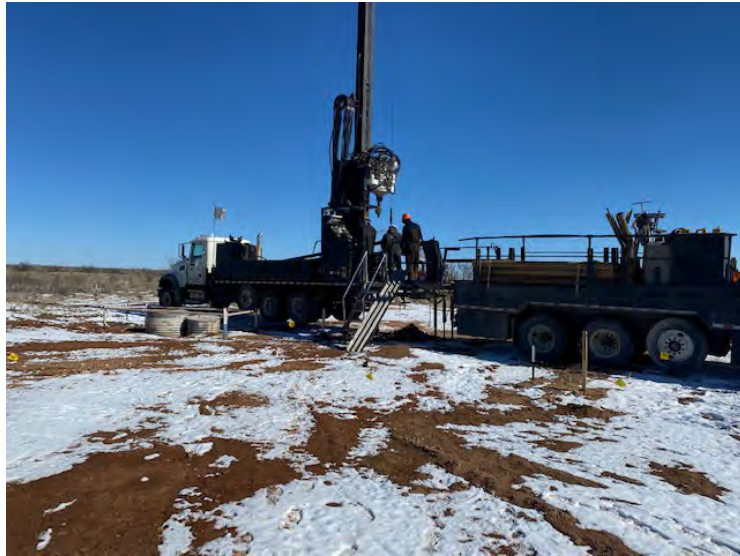
Photograph 4: View of hydrovac excavation around above ground equipment and active pipelines facing northeast.

EMSU B #865

32.58314, -103.32603

Photographs Taken: May 29, 2019 through February 6, 2020

PHOTOGRAPHIC LOG



Photograph 5: View of drilling equipment at the Site while drilling BH07.



Photograph 6: View of Site after drilling facing east.

ATTACHMENT 2: LABORATORY ANALYTICAL REPORTS



Analytical Report 627208

for
LT Environmental, Inc.

Project Manager: Dan Moir

EMSU B 865

12919105

19-JUN-19

Collected By: Client



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

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

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

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



19-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **627208**

EMSU B 865

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) 627208. 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. 627208 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 627208

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	06-06-19 14:15	0.5 ft	627208-001
SS02	S	06-06-19 14:25	0.5 ft	627208-002

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: EMSU B 865**

Project ID: 12919105
Work Order Number(s): 627208

Report Date: 19-JUN-19
Date Received: 06/11/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3092083 Chloride by EPA 300

Lab Sample ID 627226-001 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: 627208-002.

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

Batch: LBA-3092736 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: 627208-001.



Certificate of Analysis Summary 627208

LT Environmental, Inc., Arvada, CO

Project Name: EMSU B 865



Project Id: 12919105
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Tue Jun-11-19 11:20 am
Report Date: 19-JUN-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	627208-001	627208-002				
	Field Id:	SS01	SS02				
	Depth:	0.5- ft	0.5- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Jun-06-19 14:15	Jun-06-19 14:25				
BTEX by EPA 8021B	Extracted:	Jun-14-19 14:00	Jun-14-19 14:00				
	Analyzed:	Jun-18-19 08:36	Jun-18-19 08:56				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00199 0.00199	<0.00198 0.00198				
	Toluene	<0.00199 0.00199	<0.00198 0.00198				
Ethylbenzene		<0.00199 0.00199	<0.00198 0.00198				
m,p-Xylenes		<0.00398 0.00398	<0.00397 0.00397				
o-Xylene		<0.00199 0.00199	<0.00198 0.00198				
Total Xylenes		<0.00199 0.00199	<0.00198 0.00198				
Total BTEX		<0.00199 0.00199	<0.00198 0.00198				
Chloride by EPA 300	Extracted:	Jun-12-19 08:30	Jun-12-19 09:00				
	Analyzed:	Jun-12-19 12:31	Jun-12-19 09:30				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	46.7 4.95	14.5 5.00				
TPH by SW8015 Mod	Extracted:	Jun-14-19 12:00	Jun-14-19 12:00				
	Analyzed:	Jun-15-19 06:34	Jun-15-19 06:59				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0	<15.0 15.0				
	Diesel Range Organics (DRO)	28.8 15.0	<15.0 15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0				
Total TPH		28.8 15.0	<15.0 15.0				
Total GRO-DRO		28.8 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 627208

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **SS01**
 Lab Sample Id: 627208-001

Matrix: Soil
 Date Collected: 06.06.19 14.15

Date Received: 06.11.19 11.20
 Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3092072

Date Prep: 06.12.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	46.7	4.95	mg/kg	06.12.19 12.31		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092435

Date Prep: 06.14.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.15.19 06.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	28.8	15.0	mg/kg	06.15.19 06.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.15.19 06.34	U	1
Total TPH	PHC635	28.8	15.0	mg/kg	06.15.19 06.34		1
Total GRO-DRO	PHC628	28.8	15.0	mg/kg	06.15.19 06.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	06.15.19 06.34	
o-Terphenyl	84-15-1	84	%	70-135	06.15.19 06.34	



Certificate of Analytical Results 627208

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **SS01**
 Lab Sample Id: 627208-001

Matrix: Soil
 Date Collected: 06.06.19 14.15

Date Received: 06.11.19 11.20
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3092736

Date Prep: 06.14.19 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.18.19 08.36	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.18.19 08.36	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.18.19 08.36	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.18.19 08.36	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.18.19 08.36	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.18.19 08.36	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.18.19 08.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.18.19 08.36		
4-Bromofluorobenzene	460-00-4	152	%	70-130	06.18.19 08.36	**	



Certificate of Analytical Results 627208

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **SS02** Matrix: Soil Date Received: 06.11.19 11.20
 Lab Sample Id: 627208-002 Date Collected: 06.06.19 14.25 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 06.12.19 09.00 Basis: Wet Weight
 Seq Number: 3092083

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.5	5.00	mg/kg	06.12.19 09.30		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 06.14.19 12.00 Basis: Wet Weight
 Seq Number: 3092435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.15.19 06.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.15.19 06.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.15.19 06.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.15.19 06.59	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.15.19 06.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	06.15.19 06.59	
o-Terphenyl	84-15-1	78	%	70-135	06.15.19 06.59	



Certificate of Analytical Results 627208

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **SS02**
 Lab Sample Id: 627208-002

Matrix: Soil
 Date Collected: 06.06.19 14.25

Date Received: 06.11.19 11.20
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3092736

Prep Method: SW5030B

% Moisture:

Date Prep: 06.14.19 14.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.18.19 08.56	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.18.19 08.56	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.18.19 08.56	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.18.19 08.56	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.18.19 08.56	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.18.19 08.56	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.18.19 08.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	70-130	06.18.19 08.56		
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.18.19 08.56		



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.

EMSU B 865

Analytical Method: Chloride by EPA 300

Seq Number: 3092072

MB Sample Id: 7679680-1-BLK

Matrix: Solid

LCS Sample Id: 7679680-1-BKS

Prep Method: E300P

Date Prep: 06.12.19

LCSD Sample Id: 7679680-1-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	242	97	243	97	90-110	0	20	mg/kg	06.12.19 09:01	

Analytical Method: Chloride by EPA 300

Seq Number: 3092083

MB Sample Id: 7679681-1-BLK

Matrix: Solid

LCS Sample Id: 7679681-1-BKS

Prep Method: E300P

Date Prep: 06.12.19

LCSD Sample Id: 7679681-1-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	237	95	239	96	90-110	1	20	mg/kg	06.12.19 09:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3092072

Parent Sample Id: 627091-008

Matrix: Soil

MS Sample Id: 627091-008 S

Prep Method: E300P

Date Prep: 06.12.19

MSD Sample Id: 627091-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1.36	249	271	108	271	108	90-110	0	20	mg/kg	06.12.19 09:23	

Analytical Method: Chloride by EPA 300

Seq Number: 3092072

Parent Sample Id: 627091-016

Matrix: Soil

MS Sample Id: 627091-016 S

Prep Method: E300P

Date Prep: 06.12.19

MSD Sample Id: 627091-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.855	249	242	97	242	97	90-110	0	20	mg/kg	06.12.19 11:04	

Analytical Method: Chloride by EPA 300

Seq Number: 3092083

Parent Sample Id: 627208-002

Matrix: Soil

MS Sample Id: 627208-002 S

Prep Method: E300P

Date Prep: 06.12.19

MSD Sample Id: 627208-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	14.5	250	289	110	291	111	90-110	1	20	mg/kg	06.12.19 09:35	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.

EMSU B 865

Analytical Method: Chloride by EPA 300

Seq Number: 3092083

Parent Sample Id: 627226-001

Matrix: Soil

MS Sample Id: 627226-001 S

Prep Method: E300P

Date Prep: 06.12.19

MSD Sample Id: 627226-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4.11	250	257	101	257	101	90-110	0	20	mg/kg	06.12.19 10:43	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3092435

MB Sample Id: 7680003-1-BLK

Matrix: Solid

LCS Sample Id: 7680003-1-BKS

Prep Method: TX1005P

Date Prep: 06.14.19

LCSD Sample Id: 7680003-1-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)	14.8	1000	862	86	841	84	70-135	2	20	mg/kg	06.15.19 01:41	
Diesel Range Organics (DRO)	<8.13	1000	899	90	876	88	70-135	3	20	mg/kg	06.15.19 01:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		86		83		70-135	%	06.15.19 01:41
o-Terphenyl	92		99		94		70-135	%	06.15.19 01:41

Analytical Method: TPH by SW8015 Mod

Seq Number: 3092435

Parent Sample Id: 627205-001

Matrix: Soil

MS Sample Id: 627205-001 S

Prep Method: TX1005P

Date Prep: 06.14.19

MSD Sample Id: 627205-001 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)	14.8	1000	789	77	800	79	70-135	1	20	mg/kg	06.15.19 02:54	
Diesel Range Organics (DRO)	8.75	1000	828	82	845	84	70-135	2	20	mg/kg	06.15.19 02:54	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	73		77		70-135	%	06.15.19 02:54
o-Terphenyl	90		86		70-135	%	06.15.19 02:54

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

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

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.

EMSU B 865

Analytical Method: BTEX by EPA 8021B

Seq Number: 3092736

MB Sample Id: 7680039-1-BLK

Matrix: Solid

LCS Sample Id: 7680039-1-BKS

Prep Method: SW5030B

Date Prep: 06.14.19

LCSD Sample Id: 7680039-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0743	74	0.0838	84	70-130	12	35	mg/kg	06.18.19 05:06	
Toluene	<0.000455	0.0998	0.0765	77	0.0843	84	70-130	10	35	mg/kg	06.18.19 05:06	
Ethylbenzene	<0.000564	0.0998	0.0883	88	0.0964	96	70-130	9	35	mg/kg	06.18.19 05:06	
m,p-Xylenes	<0.00101	0.200	0.177	89	0.192	96	70-130	8	35	mg/kg	06.18.19 05:06	
o-Xylene	<0.00200	0.0998	0.0850	85	0.0924	92	70-130	8	35	mg/kg	06.18.19 05:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		95		96		70-130	%	06.18.19 05:06
4-Bromofluorobenzene	110		106		103		70-130	%	06.18.19 05:06

Analytical Method: BTEX by EPA 8021B

Seq Number: 3092736

Parent Sample Id: 627205-007

Matrix: Soil

MS Sample Id: 627205-007 S

Prep Method: SW5030B

Date Prep: 06.14.19

MSD Sample Id: 627205-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0813	80	0.0862	86	70-130	6	35	mg/kg	06.18.19 05:46	
Toluene	<0.00201	0.101	0.0826	82	0.0840	84	70-130	2	35	mg/kg	06.18.19 05:46	
Ethylbenzene	<0.00201	0.101	0.0942	93	0.0944	94	70-130	0	35	mg/kg	06.18.19 05:46	
m,p-Xylenes	<0.00102	0.201	0.189	94	0.188	94	70-130	1	35	mg/kg	06.18.19 05:46	
o-Xylene	<0.00201	0.101	0.0921	91	0.0911	91	70-130	1	35	mg/kg	06.18.19 05:46	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		98		70-130	%	06.18.19 05:46
4-Bromofluorobenzene	110		104		70-130	%	06.18.19 05:46

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

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

10728

Houston TX (281) 240 4200 Dallas TX (214) 602 0200 San Antonio TX (214) 520 0004

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 (813-630-3000)

www.xenco.com

Page 1 of 1

of

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

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

Project Name:	EMSU B 865	Turn Around	ANALYSIS REQUEST							Work Order Notes
Project Number:	12919105	Routine								
P.O. Number:		Rush:	X							
Sampler's Name:	Lynda Laumbach	Due Date:								

SAMPLE RECEIPT		Temp Blank:		Yes	No	Wet Ice:	Yes	No
Temperature (°C):		D. 0.014				Thermometer ID:	B2	
Received intact:		Yes		No				
Cooler Custody Seals:		Yes	No	N/A		Correction Factor:	-0.1	
Sample Custody Seals:		Yes	No	N/A		Total Containers:		

Number of Containers

(EPA 8015)

(EPA 0-8021)

(EPA 300.0)

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

[illegible]

Total 200.7 / 6010 200.8 / 6020:

8RCRA 13PPN

Circle Method(s) and Metal(s) to be analyzed

TCLP / SPLP

KCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U

1631 / 245.1 / 7470 / 74

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
		06-07-19 16:40			06/11/19



Client: LT Environmental, Inc.

Date/ Time Received: 06/11/2019 11:20:00 AM

Work Order #: 627208

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 06/11/2019

Checklist reviewed by:

Jessica Kramer

Date: 06/11/2019

Analytical Report 629132

for
LT Environmental, Inc.

Project Manager: Dan Moir

EMSUB 865

30-JUN-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)



30-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **629132**

EMSUB 865

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) 629132. 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. 629132 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 629132****LT Environmental, Inc., Arvada, CO**

EMSUB 865

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	06-25-19 11:50	4 ft	629132-001
BH01A	S	06-25-19 13:40	8 ft	629132-002
BH02	S	06-25-19 12:25	4 ft	629132-003
BH02A	S	06-25-19 15:10	7 ft	629132-004
BH03	S	06-25-19 13:10	3 ft	629132-005
BH03A	S	06-25-19 13:15	4 ft	629132-006
BH04	S	06-25-19 12:45	2 ft	629132-007
BH04A	S	06-25-19 15:30	5 ft	629132-008

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: EMSUB 865**

Project ID:
Work Order Number(s): 629132

Report Date: 30-JUN-19
Date Received: 06/26/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3093835 Chloride by EPA 300

Lab Sample ID 629150-003 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 629132-001, -002, -003, -004, -005, -006, -007, -008. The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3093881 TPH by SW8015 Mod

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

Samples affected are: 629137-001 S, 629137-001 SD, 629132-006, 629132-008, 629132-003.

Batch: LBA-3093944 BTEX by EPA 8021B

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

Lab Sample ID 629132-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Ethylbenzene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 629132-001, -002, -003, -004, -005, -006, -007, -008.

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



Certificate of Analysis Summary 629132

LT Environmental, Inc., Arvada, CO

Project Name: EMSUB 865

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Wed Jun-26-19 01:10 pm

Report Date: 30-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	629132-001	629132-002	629132-003	629132-004	629132-005	629132-006
	<i>Field Id:</i>	BH01	BH01A	BH02	BH02A	BH03	BH03A
	<i>Depth:</i>	4- ft	8- ft	4- ft	7- ft	3- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-25-19 11:50	Jun-25-19 13:40	Jun-25-19 12:25	Jun-25-19 15:10	Jun-25-19 13:10	Jun-25-19 13:15
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Jun-28-19 17:04	Jun-28-19 17:04	Jun-28-19 17:04	Jun-28-19 17:04	Jun-28-19 17:04	Jun-28-19 17:04
	<i>Analyzed:</i>	Jun-30-19 01:25	Jun-30-19 01:48	Jun-30-19 02:11	Jun-30-19 02:34	Jun-30-19 02:58	Jun-30-19 03:21
	<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	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00400 0.00400	<0.00401 0.00401	<0.00402 0.00402	<0.00401 0.00401	<0.00399 0.00399	<0.00400 0.00400
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Jun-27-19 16:00	Jun-27-19 16:00	Jun-27-19 16:00	Jun-27-19 16:00	Jun-27-19 16:00	Jun-27-19 16:00
	<i>Analyzed:</i>	Jun-27-19 23:14	Jun-27-19 23:36	Jun-27-19 23:43	Jun-27-19 23:50	Jun-27-19 23:58	Jun-28-19 00:19
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		576 5.03	1040 5.05	557 4.96	847 4.99	746 5.04	798 5.00
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Jun-27-19 15:00	Jun-27-19 15:00	Jun-27-19 15:00	Jun-27-19 15:00	Jun-27-19 15:00	Jun-27-19 15:00
	<i>Analyzed:</i>	Jun-28-19 06:55	Jun-28-19 07:20	Jun-28-19 06:30	Jun-28-19 07:45	Jun-28-19 08:10	Jun-28-19 08:35
	<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)		41.9 15.0	88.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Motor Oil Range Hydrocarbons (MRO)		19.3 15.0	28.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total TPH		61.2 15.0	116 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total GRO-DRO		41.9 15.0	88.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9

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

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 629132

LT Environmental, Inc., Arvada, CO

Project Name: EMSUB 865

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Wed Jun-26-19 01:10 pm

Report Date: 30-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	629132-007	629132-008				
	Field Id:	BH04	BH04A				
	Depth:	2- ft	5- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Jun-25-19 12:45	Jun-25-19 15:30				
BTEX by EPA 8021B SUB: T104704400-18-16	Extracted:	Jun-28-19 17:04	Jun-28-19 17:04				
	Analyzed:	Jun-30-19 03:44	Jun-30-19 04:07				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00199 0.00199	<0.00198 0.00198				
Toluene		<0.00199 0.00199	<0.00198 0.00198				
Ethylbenzene		<0.00199 0.00199	<0.00198 0.00198				
m,p-Xylenes		<0.00398 0.00398	<0.00397 0.00397				
o-Xylene		<0.00199 0.00199	<0.00198 0.00198				
Total Xylenes		<0.00199 0.00199	<0.00198 0.00198				
Total BTEX		<0.00199 0.00199	<0.00198 0.00198				
Chloride by EPA 300 SUB: T104704400-18-16	Extracted:	Jun-27-19 16:00	Jun-27-19 16:00				
	Analyzed:	Jun-28-19 00:27	Jun-28-19 00:34				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		916 4.98	192 5.02				
TPH by SW8015 Mod SUB: T104704400-18-16	Extracted:	Jun-27-19 15:00	Jun-27-19 15:00				
	Analyzed:	Jun-28-19 09:00	Jun-28-19 09:25				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0				
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0				
Total TPH		<15.0 15.0	<15.0 15.0				
Total GRO-DRO		<15.0 15.0	<15.0 15.0				

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 629132

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **BH01** Matrix: Soil Date Received: 06.26.19 13.10
 Lab Sample Id: 629132-001 Date Collected: 06.25.19 11.50 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 06.27.19 16.00 Basis: Wet Weight
 Seq Number: 3093835 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	576	5.03	mg/kg	06.27.19 23.14		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 06.27.19 15.00 Basis: Wet Weight
 Seq Number: 3093881 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	06.28.19 06.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	41.9	15.0	mg/kg	06.28.19 06.55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	19.3	15.0	mg/kg	06.28.19 06.55		1
Total TPH	PHC635	61.2	15.0	mg/kg	06.28.19 06.55		1
Total GRO-DRO	PHC628	41.9	15.0	mg/kg	06.28.19 06.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	06.28.19 06.55	
o-Terphenyl	84-15-1	71	%	70-135	06.28.19 06.55	



Certificate of Analytical Results 629132

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **BH01**
Lab Sample Id: 629132-001

Matrix: Soil
Date Collected: 06.25.19 11.50

Date Received: 06.26.19 13.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093944

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 17.04

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	06.30.19 01.25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.30.19 01.25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.30.19 01.25	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.30.19 01.25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.30.19 01.25	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.30.19 01.25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.30.19 01.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	91	%	70-130	06.30.19 01.25		
4-Bromofluorobenzene	460-00-4	118	%	70-130	06.30.19 01.25		



Certificate of Analytical Results 629132

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **BH01A**
Lab Sample Id: 629132-002

Matrix: Soil
Date Collected: 06.25.19 13.40

Date Received: 06.26.19 13.10
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093835

Date Prep: 06.27.19 16.00

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	1040	5.05	mg/kg	06.27.19 23.36		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093881

Date Prep: 06.27.19 15.00

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	06.28.19 07.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	88.0	15.0	mg/kg	06.28.19 07.20		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	28.0	15.0	mg/kg	06.28.19 07.20		1
Total TPH	PHC635	116	15.0	mg/kg	06.28.19 07.20		1
Total GRO-DRO	PHC628	88.0	15.0	mg/kg	06.28.19 07.20		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	06.28.19 07.20	
o-Terphenyl	84-15-1	71	%	70-135	06.28.19 07.20	



Certificate of Analytical Results 629132

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **BH01A**
Lab Sample Id: 629132-002

Matrix: Soil
Date Collected: 06.25.19 13.40

Date Received: 06.26.19 13.10
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093944

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 17.04

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	06.30.19 01.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.30.19 01.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.30.19 01.48	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.30.19 01.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.30.19 01.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.30.19 01.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.30.19 01.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	70-130	06.30.19 01.48		
4-Bromofluorobenzene	460-00-4	116	%	70-130	06.30.19 01.48		



Certificate of Analytical Results 629132

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **BH02** Matrix: Soil Date Received: 06.26.19 13.10
 Lab Sample Id: 629132-003 Date Collected: 06.25.19 12.25 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 06.27.19 16.00 Basis: Wet Weight
 Seq Number: 3093835 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	557	4.96	mg/kg	06.27.19 23.43		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 06.27.19 15.00 Basis: Wet Weight
 Seq Number: 3093881 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	06.28.19 06.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.28.19 06.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.28.19 06.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.28.19 06.30	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.28.19 06.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	06.28.19 06.30	
o-Terphenyl	84-15-1	62	%	70-135	06.28.19 06.30	**



Certificate of Analytical Results 629132

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **BH02**
Lab Sample Id: 629132-003

Matrix: Soil
Date Collected: 06.25.19 12.25

Date Received: 06.26.19 13.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093944

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 17.04

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	06.30.19 02.11	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.30.19 02.11	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.30.19 02.11	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.30.19 02.11	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.30.19 02.11	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.30.19 02.11	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.30.19 02.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	06.30.19 02.11		
1,4-Difluorobenzene	540-36-3	90	%	70-130	06.30.19 02.11		



Certificate of Analytical Results 629132

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **BH02A** Matrix: Soil Date Received: 06.26.19 13.10
 Lab Sample Id: 629132-004 Date Collected: 06.25.19 15.10 Sample Depth: 7 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 06.27.19 16.00 Basis: Wet Weight
 Seq Number: 3093835 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	847	4.99	mg/kg	06.27.19 23.50		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 06.27.19 15.00 Basis: Wet Weight
 Seq Number: 3093881 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	06.28.19 07.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.28.19 07.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.28.19 07.45	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.28.19 07.45	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.28.19 07.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	06.28.19 07.45	
o-Terphenyl	84-15-1	71	%	70-135	06.28.19 07.45	



Certificate of Analytical Results 629132

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **BH02A**
Lab Sample Id: 629132-004

Matrix: Soil
Date Collected: 06.25.19 15.10

Date Received: 06.26.19 13.10
Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093944

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 17.04

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	06.30.19 02.34	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.30.19 02.34	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.30.19 02.34	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.30.19 02.34	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.30.19 02.34	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.30.19 02.34	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.30.19 02.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	88	%	70-130	06.30.19 02.34		
4-Bromofluorobenzene	460-00-4	124	%	70-130	06.30.19 02.34		



Certificate of Analytical Results 629132

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **BH03** Matrix: Soil Date Received: 06.26.19 13.10
 Lab Sample Id: 629132-005 Date Collected: 06.25.19 13.10 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 06.27.19 16.00 Basis: Wet Weight
 Seq Number: 3093835 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	746	5.04	mg/kg	06.27.19 23.58		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 06.27.19 15.00 Basis: Wet Weight
 Seq Number: 3093881 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	06.28.19 08.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.28.19 08.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.28.19 08.10	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.28.19 08.10	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.28.19 08.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	06.28.19 08.10	
o-Terphenyl	84-15-1	79	%	70-135	06.28.19 08.10	



Certificate of Analytical Results 629132

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **BH03**
Lab Sample Id: 629132-005

Matrix: Soil
Date Collected: 06.25.19 13.10

Date Received: 06.26.19 13.10
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093944

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 17.04

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	06.30.19 02.58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.30.19 02.58	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.30.19 02.58	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.30.19 02.58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.30.19 02.58	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.30.19 02.58	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.30.19 02.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	06.30.19 02.58		
1,4-Difluorobenzene	540-36-3	89	%	70-130	06.30.19 02.58		



Certificate of Analytical Results 629132

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **BH03A**
Lab Sample Id: 629132-006

Matrix: Soil
Date Collected: 06.25.19 13.15

Date Received: 06.26.19 13.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093835

Date Prep: 06.27.19 16.00

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	798	5.00	mg/kg	06.28.19 00.19		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093881

Date Prep: 06.27.19 15.00

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	06.28.19 08.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.28.19 08.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.28.19 08.35	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.28.19 08.35	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.28.19 08.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	06.28.19 08.35	
o-Terphenyl	84-15-1	64	%	70-135	06.28.19 08.35	**



Certificate of Analytical Results 629132

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **BH03A**
Lab Sample Id: 629132-006

Matrix: Soil
Date Collected: 06.25.19 13.15

Date Received: 06.26.19 13.10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093944

Date Prep: 06.28.19 17.04

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	06.30.19 03.21	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.30.19 03.21	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.30.19 03.21	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.30.19 03.21	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.30.19 03.21	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.30.19 03.21	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.30.19 03.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	90	%	70-130	06.30.19 03.21		
4-Bromofluorobenzene	460-00-4	122	%	70-130	06.30.19 03.21		



Certificate of Analytical Results 629132

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **BH04** Matrix: Soil Date Received: 06.26.19 13.10
 Lab Sample Id: 629132-007 Date Collected: 06.25.19 12.45 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 06.27.19 16.00 Basis: Wet Weight
 Seq Number: 3093835 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	916	4.98	mg/kg	06.28.19 00.27		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 06.27.19 15.00 Basis: Wet Weight
 Seq Number: 3093881 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	06.28.19 09.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.28.19 09.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.28.19 09.00	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.28.19 09.00	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.28.19 09.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	06.28.19 09.00	
o-Terphenyl	84-15-1	78	%	70-135	06.28.19 09.00	



Certificate of Analytical Results 629132

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **BH04**
Lab Sample Id: 629132-007

Matrix: Soil
Date Collected: 06.25.19 12.45

Date Received: 06.26.19 13.10
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093944

Date Prep: 06.28.19 17.04

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	06.30.19 03.44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.30.19 03.44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.30.19 03.44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.30.19 03.44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.30.19 03.44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.30.19 03.44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.30.19 03.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	123	%	70-130	06.30.19 03.44		
1,4-Difluorobenzene	540-36-3	90	%	70-130	06.30.19 03.44		



Certificate of Analytical Results 629132

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **BH04A**
Lab Sample Id: 629132-008

Matrix: Soil
Date Collected: 06.25.19 15.30

Date Received: 06.26.19 13.10
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093835

Date Prep: 06.27.19 16.00

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	192	5.02	mg/kg	06.28.19 00.34		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093881

Date Prep: 06.27.19 15.00

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	06.28.19 09.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.28.19 09.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.28.19 09.25	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.28.19 09.25	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.28.19 09.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	06.28.19 09.25	
o-Terphenyl	84-15-1	66	%	70-135	06.28.19 09.25	**



Certificate of Analytical Results 629132

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **BH04A**
Lab Sample Id: 629132-008

Matrix: Soil
Date Collected: 06.25.19 15.30

Date Received: 06.26.19 13.10
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093944

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 17.04

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	06.30.19 04.07	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.30.19 04.07	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.30.19 04.07	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.30.19 04.07	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.30.19 04.07	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.30.19 04.07	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.30.19 04.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	125	%	70-130	06.30.19 04.07		
1,4-Difluorobenzene	540-36-3	89	%	70-130	06.30.19 04.07		



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.

EMSUB 865

Analytical Method: Chloride by EPA 300

Seq Number: 3093835

MB Sample Id: 7680924-1-BLK

Matrix: Solid

LCS Sample Id: 7680924-1-BKS

Prep Method: E300P

Date Prep: 06.27.19

LCSD Sample Id: 7680924-1-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	243	97	242	97	90-110	0	20	mg/kg	06.27.19 23:00	

Analytical Method: Chloride by EPA 300

Seq Number: 3093835

Parent Sample Id: 629132-001

Matrix: Soil

MS Sample Id: 629132-001 S

Prep Method: E300P

Date Prep: 06.27.19

MSD Sample Id: 629132-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	576	252	802	90	800	89	90-110	0	20	mg/kg	06.27.19 23:21	X

Analytical Method: Chloride by EPA 300

Seq Number: 3093835

Parent Sample Id: 629150-003

Matrix: Soil

MS Sample Id: 629150-003 S

Prep Method: E300P

Date Prep: 06.27.19

MSD Sample Id: 629150-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	152	250	404	101	405	101	90-110	0	20	mg/kg	06.28.19 01:03	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093881

MB Sample Id: 7680988-1-BLK

Matrix: Solid

LCS Sample Id: 7680988-1-BKS

Prep Method: TX1005P

Date Prep: 06.27.19

LCSD Sample Id: 7680988-1-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	983	98	1050	105	70-135	7	20	mg/kg	06.27.19 23:24	
Diesel Range Organics (DRO)	<8.13	1000	901	90	998	100	70-135	10	20	mg/kg	06.27.19 23:24	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	91		83		92		70-135	%	06.27.19 23:24
o-Terphenyl	72		71		79		70-135	%	06.27.19 23:24

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

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

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

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



LT Environmental, Inc.

EMSUB 865

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093881

Parent Sample Id: 629137-001

Matrix: Soil

MS Sample Id: 629137-001 S

Prep Method: TX1005P

Date Prep: 06.27.19

MSD Sample Id: 629137-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	11.3	999	925	91	945	94	70-135	2	20	mg/kg	06.28.19 00:40	
Diesel Range Organics (DRO)	25.3	999	899	87	931	91	70-135	3	20	mg/kg	06.28.19 00:40	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	86		87		70-135	%	06.28.19 00:40
o-Terphenyl	51	**	61	**	70-135	%	06.28.19 00:40

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093944

MB Sample Id: 7681016-1-BLK

Matrix: Solid

LCS Sample Id: 7681016-1-BKS

Prep Method: SW5030B

Date Prep: 06.28.19

LCSD Sample Id: 7681016-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0718	72	0.0759	76	70-130	6	35	mg/kg	06.29.19 22:59	
Toluene	<0.00199	0.0996	0.0826	83	0.0855	86	70-130	3	35	mg/kg	06.29.19 22:59	
Ethylbenzene	0.000569	0.0996	0.0900	90	0.0945	95	70-130	5	35	mg/kg	06.29.19 22:59	
m,p-Xylenes	<0.00101	0.199	0.175	88	0.184	92	70-130	5	35	mg/kg	06.29.19 22:59	
o-Xylene	<0.00199	0.0996	0.0861	86	0.0897	90	70-130	4	35	mg/kg	06.29.19 22:59	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	84		91		92		70-130	%	06.29.19 22:59
4-Bromofluorobenzene	114		104		104		70-130	%	06.29.19 22:59

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093944

Parent Sample Id: 629132-001

Matrix: Soil

MS Sample Id: 629132-001 S

Prep Method: SW5030B

Date Prep: 06.28.19

MSD Sample Id: 629132-001 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	0.0174	17	0.0189	19	70-130	8	35	mg/kg	06.29.19 23:46	X
Toluene	<0.00200	0.100	0.0266	27	0.0283	28	70-130	6	35	mg/kg	06.29.19 23:46	X
Ethylbenzene	<0.00200	0.100	0.0703	70	0.0661	65	70-130	6	35	mg/kg	06.29.19 23:46	X
m,p-Xylenes	<0.00401	0.200	0.0971	49	0.0985	49	70-130	1	35	mg/kg	06.29.19 23:46	X
o-Xylene	<0.00200	0.100	0.0516	52	0.0521	52	70-130	1	35	mg/kg	06.29.19 23:46	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		92		70-130	%	06.29.19 23:46
4-Bromofluorobenzene	113		114		70-130	%	06.29.19 23:46

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

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

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

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



Chain of Custody

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

Work Order No: 629132

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432.704.5178	Email:	ggreen@ltenv.com ; dmoir@ltenv.com

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

Project Name:	EMS08 865	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	1RP-5562	Rush: Yes	
Sampler's Name:	Garrett Green	Due Date: 6/28/14	

SAMPLE RECEIPT Temperature (°C): 8.8 Received Intact: Yes No Cooler Custody Seals: Yes No N/A Sample Custody Seals: Yes No N/A		Temp Blank: Yes No Wet Ice: Yes No Thermometer ID: TM4004 Correction Factor: -0.2 Total Containers: 8
--	--	---

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
BH01	S	06/25/14	11:50	4'	1	X	X	X		
BH01A			13:40	8'	1					
BH02			12:25	4'	1					
BH02A			15:10	7'	1					
BH03			13:10	3'	1					
BH03A			13:15	4'	1					
BH04			12:45	2'	1					
BH04A			15:30	5'	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
<i>[Signature]</i>	<i>[Signature]</i>	06/26/14 13:30	<i>[Signature]</i>	<i>[Signature]</i>	06/26/14 13:10



Inter-Office Shipment

Page 1 of 2

IOS Number **42341**

Date/Time: 06/26/19 14:44

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
629132-001	S	BH01	06/25/19 11:50	SW8015MOD_NM	TPH by SW8015 Mod	06/28/19	07/09/19	JKR	GRO-DRO PHCC10C28 PF	
629132-001	S	BH01	06/25/19 11:50	E300_CL	Chloride by EPA 300	06/28/19	12/22/19	JKR	CL	
629132-001	S	BH01	06/25/19 11:50	SW8021B	BTEX by EPA 8021B	06/28/19	07/09/19	JKR	BR4FBZ BZ BZME EBZ X	
629132-002	S	BH01A	06/25/19 13:40	SW8015MOD_NM	TPH by SW8015 Mod	06/28/19	07/09/19	JKR	GRO-DRO PHCC10C28 PF	
629132-002	S	BH01A	06/25/19 13:40	SW8021B	BTEX by EPA 8021B	06/28/19	07/09/19	JKR	BR4FBZ BZ BZME EBZ X	
629132-002	S	BH01A	06/25/19 13:40	E300_CL	Chloride by EPA 300	06/28/19	12/22/19	JKR	CL	
629132-003	S	BH02	06/25/19 12:25	SW8021B	BTEX by EPA 8021B	06/28/19	07/09/19	JKR	BR4FBZ BZ BZME EBZ X	
629132-003	S	BH02	06/25/19 12:25	SW8015MOD_NM	TPH by SW8015 Mod	06/28/19	07/09/19	JKR	GRO-DRO PHCC10C28 PF	
629132-003	S	BH02	06/25/19 12:25	E300_CL	Chloride by EPA 300	06/28/19	12/22/19	JKR	CL	
629132-004	S	BH02A	06/25/19 15:10	SW8021B	BTEX by EPA 8021B	06/28/19	07/09/19	JKR	BR4FBZ BZ BZME EBZ X	
629132-004	S	BH02A	06/25/19 15:10	SW8015MOD_NM	TPH by SW8015 Mod	06/28/19	07/09/19	JKR	GRO-DRO PHCC10C28 PF	
629132-004	S	BH02A	06/25/19 15:10	E300_CL	Chloride by EPA 300	06/28/19	12/22/19	JKR	CL	
629132-005	S	BH03	06/25/19 13:10	SW8021B	BTEX by EPA 8021B	06/28/19	07/09/19	JKR	BR4FBZ BZ BZME EBZ X	
629132-005	S	BH03	06/25/19 13:10	SW8015MOD_NM	TPH by SW8015 Mod	06/28/19	07/09/19	JKR	GRO-DRO PHCC10C28 PF	
629132-005	S	BH03	06/25/19 13:10	E300_CL	Chloride by EPA 300	06/28/19	12/22/19	JKR	CL	
629132-006	S	BH03A	06/25/19 13:15	SW8015MOD_NM	TPH by SW8015 Mod	06/28/19	07/09/19	JKR	GRO-DRO PHCC10C28 PF	
629132-006	S	BH03A	06/25/19 13:15	SW8021B	BTEX by EPA 8021B	06/28/19	07/09/19	JKR	BR4FBZ BZ BZME EBZ X	
629132-006	S	BH03A	06/25/19 13:15	E300_CL	Chloride by EPA 300	06/28/19	12/22/19	JKR	CL	
629132-007	S	BH04	06/25/19 12:45	E300_CL	Chloride by EPA 300	06/28/19	12/22/19	JKR	CL	
629132-007	S	BH04	06/25/19 12:45	SW8021B	BTEX by EPA 8021B	06/28/19	07/09/19	JKR	BR4FBZ BZ BZME EBZ X	
629132-007	S	BH04	06/25/19 12:45	SW8015MOD_NM	TPH by SW8015 Mod	06/28/19	07/09/19	JKR	GRO-DRO PHCC10C28 PF	
629132-008	S	BH04A	06/25/19 15:30	SW8021B	BTEX by EPA 8021B	06/28/19	07/09/19	JKR	BR4FBZ BZ BZME EBZ X	
629132-008	S	BH04A	06/25/19 15:30	E300_CL	Chloride by EPA 300	06/28/19	12/22/19	JKR	CL	
629132-008	S	BH04A	06/25/19 15:30	SW8015MOD_NM	TPH by SW8015 Mod	06/28/19	07/09/19	JKR	GRO-DRO PHCC10C28 PF	



Inter-Office Shipment

Page 2 of 2

IOS Number 42341

Date/Time: 06/26/19 14:44

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

Inter Office Shipment or Sample Comments:

Relinquished By:

A handwritten signature in black ink, appearing to read 'Elizabeth McClellan', written over a light blue rectangular background.

Elizabeth McClellan

Received By:

A handwritten signature in black ink, appearing to read 'Brianna Teel', written over a light blue rectangular background.

Brianna Teel

Date Relinquished: 06/26/2019

Date Received: _____

Cooler Temperature: _____



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 42341

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sent By: Elizabeth McClellan

Date Sent: 06/26/2019 02:44 PM

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:

Brianna Teel

Date: _____



Client: LT Environmental, Inc.

Date/ Time Received: 06/26/2019 01:10:00 PM

Work Order #: 629132

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)?	8.8	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	Chilling in progress.
#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	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: 06/26/2019

Checklist reviewed by:

Jessica Kramer

Date: 06/27/2019

Analytical Report 629400

for
LT Environmental, Inc.

Project Manager: Dan Moir

EMSU B-865

01-JUL-19

Collected By: Client



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

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

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

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



01-JUL-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **629400**

EMSU B-865

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) 629400. 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. 629400 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 629400****LT Environmental, Inc., Arvada, CO**

EMSU B-865

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH05	S	06-26-19 11:30	1 ft	629400-001
BH05A	S	06-26-19 11:45	4 ft	629400-002
BH06	S	06-26-19 11:50	1 ft	629400-003
BH06A	S	06-26-19 12:00	3 ft	629400-004

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: EMSU B-865**

Project ID:
Work Order Number(s): 629400

Report Date: 01-JUL-19
Date Received: 06/28/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3094061 BTEX by EPA 8021B

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

Samples affected are: 629400-001 S, 629400-004.

Lab Sample ID 629400-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene 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: 629400-001, -002, -003, -004.

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

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



Certificate of Analysis Summary 629400

LT Environmental, Inc., Arvada, CO

Project Name: EMSU B-865



Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Fri Jun-28-19 11:35 am

Report Date: 01-JUL-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	629400-001	629400-002	629400-003	629400-004		
	Field Id:	BH05	BH05A	BH06	BH06A		
	Depth:	1- ft	4- ft	1- ft	3- ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	Jun-26-19 11:30	Jun-26-19 11:45	Jun-26-19 11:50	Jun-26-19 12:00		
BTEX by EPA 8021B	Extracted:	Jun-30-19 17:00	Jun-30-19 17:00	Jun-30-19 17:00	Jun-30-19 17:00		
	Analyzed:	Jul-01-19 02:16	Jul-01-19 02:39	Jul-01-19 10:09	Jul-01-19 03:25		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
	Benzene	<0.00199 0.00199	<0.00203 0.00203	<0.00199 0.00199	<0.00200 0.00200		
	Toluene	<0.00199 0.00199	<0.00203 0.00203	<0.00199 0.00199	<0.00200 0.00200		
Ethylbenzene		<0.00199 0.00199	<0.00203 0.00203	<0.00199 0.00199	<0.00200 0.00200		
m,p-Xylenes		<0.00398 0.00398	<0.00406 0.00406	<0.00398 0.00398	<0.00399 0.00399		
o-Xylene		<0.00199 0.00199	<0.00203 0.00203	<0.00199 0.00199	<0.00200 0.00200		
Total Xylenes		<0.00199 0.00199	<0.00203 0.00203	<0.00199 0.00199	<0.00200 0.00200		
Total BTEX		<0.00199 0.00199	<0.00203 0.00203	<0.00199 0.00199	<0.00200 0.00200		
Chloride by EPA 300	Extracted:	Jun-28-19 15:00	Jun-28-19 15:00	Jun-28-19 15:00	Jun-28-19 15:00		
	Analyzed:	Jun-28-19 17:32	Jun-28-19 17:39	Jun-28-19 17:47	Jun-28-19 18:08		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		228 5.00	12.3 5.00	12.9 4.97	192 4.95		
TPH by SW8015 Mod	Extracted:	Jun-29-19 10:00	Jun-29-19 10:00	Jun-29-19 10:00	Jun-29-19 10:00		
	Analyzed:	Jun-29-19 14:50	Jun-29-19 16:06	Jun-29-19 16:32	Jun-29-19 16:57		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		

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 629400

LT Environmental, Inc., Arvada, CO

EMSU B-865

Sample Id: **BH05**
 Lab Sample Id: 629400-001

Matrix: Soil
 Date Collected: 06.26.19 11.30

Date Received: 06.28.19 11.35
 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093983

Date Prep: 06.28.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	228	5.00	mg/kg	06.28.19 17.32		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3094032

Date Prep: 06.29.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.29.19 14.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.29.19 14.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.29.19 14.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.29.19 14.50	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.29.19 14.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	06.29.19 14.50	
o-Terphenyl	84-15-1	93	%	70-135	06.29.19 14.50	



Certificate of Analytical Results 629400

LT Environmental, Inc., Arvada, CO

EMSU B-865

Sample Id: **BH05**
 Lab Sample Id: 629400-001

Matrix: Soil
 Date Collected: 06.26.19 11.30

Date Received: 06.28.19 11.35
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: JHB

% Moisture:

Analyst: JHB

Date Prep: 06.30.19 17.00

Basis: Wet Weight

Seq Number: 3094061

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.01.19 02.16	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.01.19 02.16	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.01.19 02.16	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.01.19 02.16	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.01.19 02.16	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.01.19 02.16	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.01.19 02.16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	116	%	70-130	07.01.19 02.16		
1,4-Difluorobenzene	540-36-3	91	%	70-130	07.01.19 02.16		



Certificate of Analytical Results 629400

LT Environmental, Inc., Arvada, CO

EMSU B-865

Sample Id: **BH05A**
 Lab Sample Id: 629400-002

Matrix: Soil
 Date Collected: 06.26.19 11.45

Date Received: 06.28.19 11.35
 Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093983

Date Prep: 06.28.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.3	5.00	mg/kg	06.28.19 17.39		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3094032

Date Prep: 06.29.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.29.19 16.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.29.19 16.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.29.19 16.06	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.29.19 16.06	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.29.19 16.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	06.29.19 16.06	
o-Terphenyl	84-15-1	89	%	70-135	06.29.19 16.06	



Certificate of Analytical Results 629400

LT Environmental, Inc., Arvada, CO

EMSU B-865

Sample Id: **BH05A**
 Lab Sample Id: 629400-002

Matrix: Soil
 Date Collected: 06.26.19 11.45

Date Received: 06.28.19 11.35
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: JHB

% Moisture:

Analyst: JHB

Date Prep: 06.30.19 17.00

Basis: Wet Weight

Seq Number: 3094061

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00203	0.00203	mg/kg	07.01.19 02.39	U	1
Toluene	108-88-3	<0.00203	0.00203	mg/kg	07.01.19 02.39	U	1
Ethylbenzene	100-41-4	<0.00203	0.00203	mg/kg	07.01.19 02.39	U	1
m,p-Xylenes	179601-23-1	<0.00406	0.00406	mg/kg	07.01.19 02.39	U	1
o-Xylene	95-47-6	<0.00203	0.00203	mg/kg	07.01.19 02.39	U	1
Total Xylenes	1330-20-7	<0.00203	0.00203	mg/kg	07.01.19 02.39	U	1
Total BTEX		<0.00203	0.00203	mg/kg	07.01.19 02.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	70-130	07.01.19 02.39		
4-Bromofluorobenzene	460-00-4	119	%	70-130	07.01.19 02.39		



Certificate of Analytical Results 629400

LT Environmental, Inc., Arvada, CO

EMSU B-865

Sample Id: **BH06** Matrix: Soil Date Received: 06.28.19 11.35
 Lab Sample Id: 629400-003 Date Collected: 06.26.19 11.50 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 06.28.19 15.00 Basis: Wet Weight
 Seq Number: 3093983

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.9	4.97	mg/kg	06.28.19 17.47		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 06.29.19 10.00 Basis: Wet Weight
 Seq Number: 3094032

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.29.19 16.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.29.19 16.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.29.19 16.32	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.29.19 16.32	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.29.19 16.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	06.29.19 16.32	
o-Terphenyl	84-15-1	71	%	70-135	06.29.19 16.32	



Certificate of Analytical Results 629400

LT Environmental, Inc., Arvada, CO

EMSU B-865

Sample Id: **BH06**
 Lab Sample Id: 629400-003

Matrix: Soil
 Date Collected: 06.26.19 11.50

Date Received: 06.28.19 11.35
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: JHB

Analyst: JHB

Seq Number: 3094061

Date Prep: 06.30.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.01.19 10.09	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.01.19 10.09	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.01.19 10.09	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.01.19 10.09	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.01.19 10.09	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.01.19 10.09	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.01.19 10.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	07.01.19 10.09		
1,4-Difluorobenzene	540-36-3	92	%	70-130	07.01.19 10.09		



Certificate of Analytical Results 629400

LT Environmental, Inc., Arvada, CO

EMSU B-865

Sample Id: **BH06A** Matrix: Soil Date Received: 06.28.19 11.35
 Lab Sample Id: 629400-004 Date Collected: 06.26.19 12.00 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 06.28.19 15.00 Basis: Wet Weight
 Seq Number: 3093983

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	192	4.95	mg/kg	06.28.19 18.08		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 06.29.19 10.00 Basis: Wet Weight
 Seq Number: 3094032

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.29.19 16.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.29.19 16.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.29.19 16.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.29.19 16.57	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.29.19 16.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	06.29.19 16.57	
o-Terphenyl	84-15-1	91	%	70-135	06.29.19 16.57	



Certificate of Analytical Results 629400

LT Environmental, Inc., Arvada, CO

EMSU B-865

Sample Id: **BH06A**
 Lab Sample Id: 629400-004

Matrix: Soil
 Date Collected: 06.26.19 12.00

Date Received: 06.28.19 11.35
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: JHB

Analyst: JHB

Seq Number: 3094061

Date Prep: 06.30.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.01.19 03.25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.01.19 03.25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.01.19 03.25	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.01.19 03.25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.01.19 03.25	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.01.19 03.25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.01.19 03.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	86	%	70-130	07.01.19 03.25		
4-Bromofluorobenzene	460-00-4	138	%	70-130	07.01.19 03.25	**	



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.

EMSU B-865

Analytical Method: Chloride by EPA 300

Seq Number: 3093983

MB Sample Id: 7681003-1-BLK

Matrix: Solid

LCS Sample Id: 7681003-1-BKS

Prep Method: E300P

Date Prep: 06.28.19

LCSD Sample Id: 7681003-1-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	06.28.19 15:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3093983

Parent Sample Id: 627590-010

Matrix: Soil

MS Sample Id: 627590-010 S

Prep Method: E300P

Date Prep: 06.28.19

MSD Sample Id: 627590-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	631	249	852	89	853	89	90-110	0	20	mg/kg	06.28.19 16:12	X

Analytical Method: Chloride by EPA 300

Seq Number: 3093983

Parent Sample Id: 629400-003

Matrix: Soil

MS Sample Id: 629400-003 S

Prep Method: E300P

Date Prep: 06.28.19

MSD Sample Id: 629400-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	12.9	249	266	102	266	102	90-110	0	20	mg/kg	06.28.19 17:54	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3094032

MB Sample Id: 7681089-1-BLK

Matrix: Solid

LCS Sample Id: 7681089-1-BKS

Prep Method: TX1005P

Date Prep: 06.29.19

LCSD Sample Id: 7681089-1-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)	<7.99	998	997	100	980	98	70-135	2	20	mg/kg	06.29.19 13:59	
Diesel Range Organics (DRO)	<8.11	998	1000	100	984	98	70-135	2	20	mg/kg	06.29.19 13:59	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	90		86		85		70-135	%	06.29.19 13:59
o-Terphenyl	73		76		73		70-135	%	06.29.19 13:59

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.

EMSU B-865

Analytical Method: TPH by SW8015 Mod

Seq Number: 3094032

Parent Sample Id: 629400-001

Matrix: Soil

MS Sample Id: 629400-001 S

Prep Method: TX1005P

Date Prep: 06.29.19

MSD Sample Id: 629400-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	8.26	997	954	95	1060	105	70-135	11	20	mg/kg	06.29.19 15:16	
Diesel Range Organics (DRO)	8.95	997	1070	106	1200	119	70-135	11	20	mg/kg	06.29.19 15:16	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	88		99		70-135	%	06.29.19 15:16
o-Terphenyl	107		124		70-135	%	06.29.19 15:16

Analytical Method: BTEX by EPA 8021B

Seq Number: 3094061

MB Sample Id: 7681048-1-BLK

Matrix: Solid

LCS Sample Id: 7681048-1-BKS

Prep Method: SW5030B

Date Prep: 06.30.19

LCSD Sample Id: 7681048-1-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	0.0744	74	0.0720	72	70-130	3	35	mg/kg	06.30.19 23:50	
Toluene	<0.00200	0.100	0.0847	85	0.0920	92	70-130	8	35	mg/kg	06.30.19 23:50	
Ethylbenzene	<0.00200	0.100	0.0881	88	0.101	101	70-130	14	35	mg/kg	06.30.19 23:50	
m,p-Xylenes	<0.00102	0.200	0.171	86	0.191	96	70-130	11	35	mg/kg	06.30.19 23:50	
o-Xylene	<0.00200	0.100	0.0820	82	0.0917	92	70-130	11	35	mg/kg	06.30.19 23:50	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	86		87		83		70-130	%	06.30.19 23:50
4-Bromofluorobenzene	111		106		119		70-130	%	06.30.19 23:50

Analytical Method: BTEX by EPA 8021B

Seq Number: 3094061

Parent Sample Id: 629400-001

Matrix: Soil

MS Sample Id: 629400-001 S

Prep Method: SW5030B

Date Prep: 06.30.19

MSD Sample Id: 629400-001 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	0.0615	62	0.0647	64	70-130	5	35	mg/kg	07.01.19 00:36	X
Toluene	<0.00200	0.100	0.0857	86	0.0824	82	70-130	4	35	mg/kg	07.01.19 00:36	
Ethylbenzene	<0.00200	0.100	0.0946	95	0.0841	83	70-130	12	35	mg/kg	07.01.19 00:36	
m,p-Xylenes	<0.00400	0.200	0.177	89	0.157	78	70-130	12	35	mg/kg	07.01.19 00:36	
o-Xylene	<0.00200	0.100	0.0882	88	0.0767	76	70-130	14	35	mg/kg	07.01.19 00:36	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	83		82		70-130	%	07.01.19 00:36
4-Bromofluorobenzene	139	**	118		70-130	%	07.01.19 00:36

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



Chain of Custody

Work Order No.

Contd

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) 565-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 281-5550
Hobbs, NM (575-382-7550)

www.xenco.com

Page 1 of 1

of

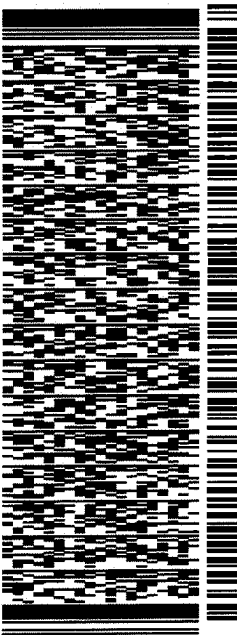
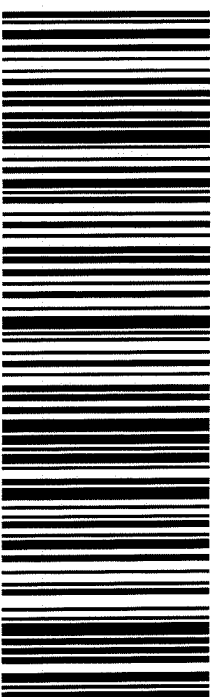
Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432.704.5178	Email:	jgreen@ltenv.com, dmoir@ltenv.com

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

[illegible]

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 		06/27/19 1315	2 		06/27/2019 13
3 	FOX	06/27/19 14:00	4 		1135
5			6		06/29/19

ORIGIN ID: CACA (281) 240-4200 SAMPLE CUSTODY XENCO LABORATORIES NM 1089 N CANAL ST CARLSBAD, NM 88220 UNITED STATES US		SHIP DATE: 27 JUN19 ACTWGT: 24.00 LB CAD: 114488676/NET 4100 DIMS: 13x9x9 IN BILL SENDER	
TO SAMPLE RECEIVING			
3600 S COUNTY ROAD 1276			
MIDLAND TX 79706			
PO: (432) 704-5440		REF: DEPT:	
			
			
565J1/D210/23AD			
TRK# 7755 8819 4175		FRI - 28 JUN HOLD	
0201		PRIORITY OVERNIGHT	
41 MAFA		HLD 79706	
		TX-US LBB	

After printing this label:

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

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

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



Client: LT Environmental, Inc.

Date/ Time Received: 06/28/2019 11:35:00 AM

Work Order #: 629400

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 06/28/2019

Checklist reviewed by:

Jessica Kramer

Date: 06/28/2019

Analytical Report 635441

for
LT Environmental, Inc.

Project Manager: Dan Moir

EMSUB 865

1RP- 5562

29-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)



29-AUG-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **635441**

EMSUB 865

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) 635441. 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. 635441 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 635441****LT Environmental, Inc., Arvada, CO**

EMSUB 865

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	08-28-19 13:50	3 ft	635441-001
PH01A	S	08-28-19 13:55	4 ft	635441-002



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: EMSUB 865

Project ID: 1RP- 5562
Work Order Number(s): 635441

Report Date: 29-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.



Certificate of Analysis Summary 635441

LT Environmental, Inc., Arvada, CO

Project Name: EMSUB 865

Project Id: 1RP- 5562

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Aug-28-19 04:30 pm

Report Date: 29-AUG-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	635441-001	635441-002				
	Field Id:	PH01	PH01A				
	Depth:	3- ft	4- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Aug-28-19 13:50	Aug-28-19 13:55				
BTEX by EPA 8021B	Extracted:	Aug-28-19 16:45	Aug-28-19 16:45				
	Analyzed:	Aug-28-19 17:15	Aug-28-19 18:35				
	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		<0.00201 0.00201	<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:	Aug-28-19 18:08	Aug-28-19 18:08				
	Analyzed:	Aug-29-19 09:59	Aug-29-19 10:18				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		843 99.2	599 49.8				
TPH by SW8015 Mod	Extracted:	Aug-28-19 16:45	Aug-28-19 16:45				
	Analyzed:	Aug-28-19 17:55	Aug-28-19 18:54				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<24.9 24.9	<25.0 25.0				
Diesel Range Organics (DRO)		58.2 24.9	<25.0 25.0				
Motor Oil Range Hydrocarbons (MRO)		<24.9 24.9	<25.0 25.0				
Total TPH		58.2 24.9	<25.0 25.0				
Total GRO-DRO		58.2 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: 1.0%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 635441

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **PH01** Matrix: Soil Date Received: 08.28.19 16.30
 Lab Sample Id: 635441-001 Date Collected: 08.28.19 13.50 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	843	99.2	mg/kg	08.29.19 09.59		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.28.19 16.45 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 17.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	58.2	24.9	mg/kg	08.28.19 17.55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	08.28.19 17.55	U	1
Total TPH	PHC635	58.2	24.9	mg/kg	08.28.19 17.55		1
Total GRO-DRO	PHC628	58.2	24.9	mg/kg	08.28.19 17.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	08.28.19 17.55	
o-Terphenyl	84-15-1	88	%	70-135	08.28.19 17.55	



Certificate of Analytical Results 635441

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **PH01**
Lab Sample Id: 635441-001

Matrix: Soil
Date Collected: 08.28.19 13.50

Date Received: 08.28.19 16.30
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.28.19 16.45

Basis: Wet Weight

Seq Number: 3100009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	08.28.19 17.15	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	08.28.19 17.15	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	08.28.19 17.15	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	08.28.19 17.15	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	08.28.19 17.15	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	08.28.19 17.15	U	1
Total BTEX		<0.00101	0.00101	mg/kg	08.28.19 17.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	08.28.19 17.15		
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.28.19 17.15		



Certificate of Analytical Results 635441

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **PH01A** Matrix: Soil Date Received: 08.28.19 16.30
 Lab Sample Id: 635441-002 Date Collected: 08.28.19 13.55 Sample Depth: 4 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	599	49.8	mg/kg	08.29.19 10.18		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.28.19 16.45 Basis: Wet Weight
 Seq Number: 3100015

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	08.28.19 18.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.28.19 18.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	08.28.19 18.54	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	08.28.19 18.54	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	08.28.19 18.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	08.28.19 18.54	
o-Terphenyl	84-15-1	110	%	70-135	08.28.19 18.54	



Certificate of Analytical Results 635441

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **PH01A**
Lab Sample Id: 635441-002

Matrix: Soil
Date Collected: 08.28.19 13.55

Date Received: 08.28.19 16.30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 08.28.19 16.45

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 18.35	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	08.28.19 18.35	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	08.28.19 18.35	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	08.28.19 18.35	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	08.28.19 18.35	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	08.28.19 18.35	U	1
Total BTEX		<0.00100	0.00100	mg/kg	08.28.19 18.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	08.28.19 18.35		
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.28.19 18.35		



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.

EMSUB 865

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: 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: 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

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.

EMSUB 865

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

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: 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

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.:

1035441

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

www.xenco.com

Page ____ of ____

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432.704.5178	Email:	ggreen@ltenv.com ; dmoir@ltenv.com

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

[illegible]



Client: LT Environmental, Inc.

Date/ Time Received: 08/28/2019 04:30:00 PM

Work Order #: 635441

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)?	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: 08/28/2019

Checklist reviewed by:

Jessica Kramer

Date: 08/28/2019

Analytical Report 636044

**for
LT Environmental, Inc.**

Project Manager: Dan Moir

EMSUB 865

06-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)



06-SEP-19

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

Reference: XENCO Report No(s): **636044**
EMSUB 865
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) 636044. 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. 636044 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,

Carlos Castro

Carlsbad Laboratory Director

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 636044

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH02	S	09-04-19 09:20	6 ft	636044-001
PH02A	S	09-04-19 10:20	18 ft	636044-002



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *EMSUB 865*

Project ID:

Work Order Number(s): 636044

Report Date: 06-SEP-19

Date Received: 09/05/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 636044

LT Environmental, Inc., Arvada, CO

Project Name: EMSUB 865

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Sep-05-19 10:40 am

Report Date: 06-SEP-19

Project Manager: Jessica Kramer

Draft

Analysis Requested	Lab Id:	636044-001	636044-002				
	Field Id:	PH02	PH02A				
	Depth:	6- ft	18- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Sep-04-19 09:20	Sep-04-19 10:20				
Chloride by EPA 300	Extracted:	Sep-05-19 16:09	Sep-05-19 16:09				
	Analyzed:	Sep-05-19 18:51	Sep-05-19 18:57				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		700 49.5	629 50.0				
TPH by SW8015 Mod	Extracted:	Sep-05-19 14:00	Sep-05-19 14:00				
	Analyzed:	Sep-05-19 18:18	Sep-05-19 18:38				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<25.1 25.1	<25.1 25.1				
Diesel Range Organics (DRO)		<25.1 25.1	202 25.1				
Motor Oil Range Hydrocarbons (MRO)		<25.1 25.1	<25.1 25.1				
Total GRO-DRO		<25.1 25.1	202 25.1				
Total TPH		<25.1 25.1	202 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

Carlos Castro
Carlsbad Laboratory Director



Certificate of Analytical Results 636044

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **PH02**
Lab Sample Id: 636044-001

Matrix: Soil
Date Collected: 09.04.19 09.20

Date Received: 09.05.19 10.40
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100678

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Draft

Date Prep: 09.05.19 16.09

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	700	49.5	mg/kg	09.05.19 18.51		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100743

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Date Prep: 09.05.19 14.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.05.19 18.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.05.19 18.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.05.19 18.18	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	09.05.19 18.18	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.05.19 18.18	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	131	%	70-135	09.05.19 18.18	
84-15-1	97	%	70-135	09.05.19 18.18	



Certificate of Analytical Results 636044

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **PH02A**
Lab Sample Id: 636044-002

Matrix: Soil
Date Collected: 09.04.19 10.20

Date Received: 09.05.19 10.40
Sample Depth: 18 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100678

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Draft

Date Prep: 09.05.19 16.09

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	629	50.0	mg/kg	09.05.19 18.57		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100743

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Date Prep: 09.05.19 14.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.05.19 18.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	202	25.1	mg/kg	09.05.19 18.38		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.05.19 18.38	U	1
Total GRO-DRO	PHC628	202	25.1	mg/kg	09.05.19 18.38		1
Total TPH	PHC635	202	25.1	mg/kg	09.05.19 18.38		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	09.05.19 18.38	
o-Terphenyl	84-15-1	103	%	70-135	09.05.19 18.38	



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.

EMSUB 865

Analytical Method: Chloride by EPA 300

Seq Number: 3100678

MB Sample Id: 7685663-1-BLK

Matrix: Solid

LCS Sample Id: 7685663-1-BKS

Prep Method: E300P

Date Prep: 09.05.19

LCSD Sample Id: 7685663-1-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	262	105	263	105	80-120	0	20	mg/kg	09.05.19 17:21	

Draft

Analytical Method: Chloride by EPA 300

Seq Number: 3100678

Parent Sample Id: 636048-001

Matrix: Soil

MS Sample Id: 636048-001 S

Prep Method: E300P

Date Prep: 09.05.19

MSD Sample Id: 636048-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	706	3990	4950	106	4980	108	80-120	1	20	mg/kg	09.05.19 17:38	

Analytical Method: Chloride by EPA 300

Seq Number: 3100678

Parent Sample Id: 636055-007

Matrix: Solid

MS Sample Id: 636055-007 S

Prep Method: E300P

Date Prep: 09.05.19

MSD Sample Id: 636055-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	404	1990	2610	111	2680	114	80-120	3	20	mg/kg	09.05.19 19:59	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100743

MB Sample Id: 7685674-1-BLK

Matrix: Solid

LCS Sample Id: 7685674-1-BKS

Prep Method: SW8015P

Date Prep: 09.05.19

LCSD Sample Id: 7685674-1-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	926	93	902	90	70-135	3	35	mg/kg	09.05.19 16:15	
Diesel Range Organics (DRO)	<9.88	1000	823	82	830	83	70-135	1	35	mg/kg	09.05.19 16:15	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		131		116		70-135	%	09.05.19 16:15
o-Terphenyl	80		96		99		70-135	%	09.05.19 16:15

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

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

EMSUB 865

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100743

Parent Sample Id: 636038-001

Matrix: Soil

MS Sample Id: 636038-001 S

Prep Method: SW8015P

Date Prep: 09.05.19

MSD Sample Id: 636038-001 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	900	90	940	94	70-135	4	35	mg/kg	09.05.19 17:17	
Diesel Range Organics (DRO)	487	995	1070	59	1290	80	70-135	19	35	mg/kg	09.05.19 17:17	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	132		129		70-135	%	09.05.19 17:17
o-Terphenyl	92		81		70-135	%	09.05.19 17:17

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



Chain of Custody

Work Order No:

632044

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

Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296

www.xenco.com

Page

of

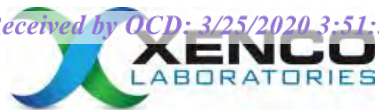
7

Project Manager:		Dan Moir	Bill to: (if different)	Kyle Littrell	Work Order Comments Program: UST/PST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐ State of Project: Reporting: Level II ☐ Level III ☐ UST/UST ☐ RRP ☐ Level IV ☐ Deliverables: EDD ☐ ADaPT ☐ Other:
Company Name:		LT Environmental, Inc., Permian office	Company Name:	XTO	
Address:		3300 North A Street	Address:		
City, State ZIP:		Midland, TX 79705	City, State ZIP:	Midland, Tx 79705	
			Email: dmoir@litenv.com		

[illegible][illegible]

Notice: Signature of this document 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. Xenco does not warrant that the information contained herein is true, complete, accurate or reliable. The information was prepared by Xenco unless previously negotiated.

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			09/03/2019 8:00			09/05/2017 12:40
3						
5						



Inter-Office Shipment

Page 1 of 1

IOS Number **47496**

Date/Time: 09/05/19 12:42

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.: 776167105560

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
636044-001	S	PH02	09/04/19 09:20	SW8021B	BTEX by EPA 8021B	09/06/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636044-002	S	PH02A	09/04/19 10:20	SW8021B	BTEX by EPA 8021B	09/06/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Relinquished By:

Elizabeth McClellan

Date Relinquished: 09/05/2019

Received By:

Brianna Teel

Date Received: 09/06/2019 11:12Cooler Temperature: 2.1



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 47496

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 09/05/2019 12:42 PM

Received By: Brianna Teel

Date Received: 09/06/2019 11:12 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.1
#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: 09/06/2019



Client: LT Environmental, Inc.

Date/ Time Received: 09/05/2019 10:40:00 AM

Work Order #: 636044

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?	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	BTEX 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: 09/05/2019

Checklist reviewed by:

Jessica Kramer

Date: 09/05/2019

Analytical Report 636046

for
LT Environmental, Inc.

Project Manager: Dan Moir

EMSUB 865

06-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)



06-SEP-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **636046**

EMSUB 865

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) 636046. 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. 636046 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,

Carlos Castro

Carlsbad Laboratory Director

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 636046

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH02B	S	09-04-19 10:40	19 ft	636046-001



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *EMSUB 865*

Project ID:
Work Order Number(s): 636046

Report Date: 06-SEP-19
Date Received: 09/05/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 636046

LT Environmental, Inc., Arvada, CO

Project Name: EMSUB 865

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Sep-05-19 10:40 am

Report Date: 06-SEP-19

Project Manager: Jessica Kramer

Draft

Analysis Requested	Lab Id:	636046-001					
	Field Id:	PH02B					
	Depth:	19- ft					
	Matrix:	SOIL					
	Sampled:	Sep-04-19 10:40					
Chloride by EPA 300	Extracted:	Sep-05-19 14:09					
	Analyzed:	Sep-05-19 16:58					
	Units/RL:	mg/kg RL					
Chloride		491 49.6					
TPH by SW8015 Mod	Extracted:	Sep-05-19 14:00					
	Analyzed:	Sep-05-19 18:59					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<25.0 25.0					
Diesel Range Organics (DRO)		348 25.0					
Motor Oil Range Hydrocarbons (MRO)		<25.0 25.0					
Total GRO-DRO		348 25.0					
Total TPH		348 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

Carlos Castro
Carlsbad Laboratory Director



Certificate of Analytical Results 636046

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **PH02B**
Lab Sample Id: 636046-001

Matrix: Soil
Date Collected: 09.04.19 10.40

Date Received: 09.05.19 10.40
Sample Depth: 19 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3100664

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 09.05.19 14.09

Draft

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	491	49.6	mg/kg	09.05.19 16.58		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3100743

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Date Prep: 09.05.19 14.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.05.19 18.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	348	25.0	mg/kg	09.05.19 18.59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.05.19 18.59	U	1
Total GRO-DRO	PHC628	348	25.0	mg/kg	09.05.19 18.59		1
Total TPH	PHC635	348	25.0	mg/kg	09.05.19 18.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	09.05.19 18.59	
o-Terphenyl	84-15-1	110	%	70-135	09.05.19 18.59	



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.

EMSUB 865

Analytical Method: Chloride by EPA 300

Seq Number: 3100664

MB Sample Id: 7685653-1-BLK

Matrix: Solid

LCS Sample Id: 7685653-1-BKS

Prep Method: E300P

Date Prep: 09.05.19

LCSD Sample Id: 7685653-1-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	260	104	80-120	0	20	mg/kg	09.05.19 14:34	

Draft

Analytical Method: Chloride by EPA 300

Seq Number: 3100664

Parent Sample Id: 635988-016

Matrix: Soil

MS Sample Id: 635988-016 S

Prep Method: E300P

Date Prep: 09.05.19

MSD Sample Id: 635988-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.9	199	232	109	227	106	80-120	2	20	mg/kg	09.05.19 14:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3100664

Parent Sample Id: 635988-028

Matrix: Solid

MS Sample Id: 635988-028 S

Prep Method: E300P

Date Prep: 09.05.19

MSD Sample Id: 635988-028 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	32.4	199	246	107	246	107	80-120	0	20	mg/kg	09.05.19 16:23	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100743

MB Sample Id: 7685674-1-BLK

Matrix: Solid

LCS Sample Id: 7685674-1-BKS

Prep Method: SW8015P

Date Prep: 09.05.19

LCSD Sample Id: 7685674-1-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	926	93	902	90	70-135	3	35	mg/kg	09.05.19 16:15	
Diesel Range Organics (DRO)	<9.88	1000	823	82	830	83	70-135	1	35	mg/kg	09.05.19 16:15	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		131		116		70-135	%	09.05.19 16:15
o-Terphenyl	80		96		99		70-135	%	09.05.19 16:15

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

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

EMSUB 865

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100743

Parent Sample Id: 636038-001

Matrix: Soil

MS Sample Id: 636038-001 S

Prep Method: SW8015P

Date Prep: 09.05.19

MSD Sample Id: 636038-001 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	900	90	940	94	70-135	4	35	mg/kg	09.05.19 17:17	
Diesel Range Organics (DRO)	487	995	1070	59	1290	80	70-135	19	35	mg/kg	09.05.19 17:17	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	132		129		70-135	%	09.05.19 17:17
o-Terphenyl	92		81		70-135	%	09.05.19 17:17

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

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

Work Order No: 636046

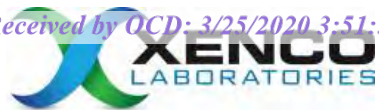
Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, TX 79705
Phone:	432.704.5178	Email:	ggreen@ltenv.com ; dmoir@ltenv.com
Project Name:	EMSUB 865	Turn Around	
Project Number:		Routine	☐
P.O. Number:	IRP-5562	Rush:	24hr
Sampler's Name:	Garrett Green	Due Date:	9/6/19

SAMPLE RECEIPT				Turn Around				ANALYSIS REQUEST												Work Order Notes	
Temperature (°C):	Temp Blank:	Yes	No	Wet Ice:	Yes	No	Thermometer ID	Number of Containers												TAT starts the day received by the lab, if received by 4:30pm	
Received Intact:	Yes	No	Yes	No	Yes	No	Correction Factor:	Chloride (EPA 300.0)												Sample Comments	
Cooler Custody Seals:	Yes	No	Yes	No	Yes	No	Total Containers:	BTEX (EPA 8021)													
Sample Custody Seals:	Yes	No	Yes	No	Yes	No		TPH (EPA 8015)													
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth																	
PH02B S		09/04/19	1040	19'																	

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
1.		09/05/2019 8:00	2.		09/05/2019 10:40
3.			4.		
5.			6.		



Inter-Office Shipment

Page 1 of 1

IOS Number **47498**

Date/Time: 09/05/19 12:47

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.: 776167105560

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
636046-001	S	PH02B	09/04/19 10:40	SW8021B	BTEX by EPA 8021B	09/06/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Relinquished By:

Elizabeth McClellan

Date Relinquished: 09/05/2019

Received By:

Brianna Teel

Date Received: 09/06/2019 11:12

Cooler Temperature: 2.1



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 47498

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 09/05/2019 12:47 PM

Received By: Brianna Teel

Date Received: 09/06/2019 11:12 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.1
#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: 09/06/2019



Client: LT Environmental, Inc.

Date/ Time Received: 09/05/2019 10:40:00 AM

Work Order #: 636046

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	BTEX 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: 09/05/2019

Checklist reviewed by:

Jessica Kramer

Date: 09/05/2019

Analytical Report 636062

**for
LT Environmental, Inc.**

Project Manager: Dan Moir

EMSUB 865

09-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)



09-SEP-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **636062**

EMSUB 865

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) 636062. 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. 636062 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 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW01	S	09-04-19 14:00	0 - 8.5 ft	636062-001
SW02	S	09-04-19 14:05	0 - 4.5 ft	636062-002
SW03	S	09-04-19 14:10	0 - 4.5 ft	636062-003
SW04	S	09-04-19 14:15	0 - 4.5 ft	636062-004
SW05	S	09-04-19 14:40	0 - 4.5 ft	636062-005
SW06	S	09-04-19 14:45	0 - 4.5 ft	636062-006
SW07	S	09-04-19 14:50	0 - 4.5 ft	636062-007
SW08	S	09-04-19 14:55	0 - 4.5 ft	636062-008
SW09	S	09-04-19 15:15	0 - 8.5 ft	636062-009
SW10	S	09-04-19 15:20	0 - 4.5 ft	636062-010
SW11	S	09-04-19 15:25	0 - 4.5 ft	636062-011
SW12	S	09-04-19 15:30	0 - 4.5 ft	636062-012
FS01	S	09-04-19 15:45	8.5 ft	636062-013
FS02	S	09-04-19 15:50	4.5 ft	636062-014
FS03	S	09-04-19 15:55	4.5 ft	636062-015
FS04	S	09-04-19 16:15	4.5 ft	636062-016
FS05	S	09-04-19 16:20	4.5 ft	636062-017
FS06	S	09-04-19 16:25	4.5 ft	636062-018
FS07	S	09-04-19 16:30	4.5 ft	636062-019
FS08	S	09-04-19 16:35	4.5 ft	636062-020
FS09	S	09-04-19 16:40	4.5 ft	636062-021

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: EMSUB 865**

Project ID:
Work Order Number(s): 636062

Report Date: 09-SEP-19
Date Received: 09/05/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3100788 BTEX by EPA 8021B

Lab Sample ID 636062-002 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 Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 636062-002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020, -021.

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.

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: 636062-002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020, -021

Batch: LBA-3100789 BTEX by EPA 8021B

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

Batch: LBA-3100794 Chloride by EPA 300

Lab Sample ID 636134-002 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: 636062-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018.

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



Certificate of Analysis Summary 636062

LT Environmental, Inc., Arvada, CO

Project Name: EMSUB 865

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Sep-05-19 10:40 am

Report Date: 09-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636062-001	636062-002	636062-003	636062-004	636062-005	636062-006
	<i>Field Id:</i>	SW01	SW02	SW03	SW04	SW05	SW06
	<i>Depth:</i>	0-8.5 ft	0-4.5 ft	0-4.5 ft	0-4.5 ft	0-4.5 ft	0-4.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-04-19 14:00	Sep-04-19 14:05	Sep-04-19 14:10	Sep-04-19 14:15	Sep-04-19 14:40	Sep-04-19 14:45
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Sep-06-19 11:00	Sep-06-19 11:15	Sep-06-19 11:15	Sep-06-19 11:15	Sep-06-19 11:15	Sep-06-19 11:15
	<i>Analyzed:</i>	Sep-06-19 20:50	Sep-07-19 08:19	*** ** *	*** ** *	*** ** *	*** ** *
	<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	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
m,p-Xylenes		<0.00399 0.00399	<0.00399 0.00399	<0.00402 0.00402	<0.00402 0.00402	<0.00403 0.00403	<0.00401 0.00401
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Sep-06-19 14:50	Sep-06-19 14:50	Sep-06-19 14:50	Sep-06-19 14:50	Sep-06-19 14:50	Sep-06-19 14:50
	<i>Analyzed:</i>	Sep-06-19 16:09	Sep-06-19 16:15	Sep-06-19 16:22	Sep-06-19 18:57	Sep-06-19 19:03	Sep-06-19 19:10
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		698 5.00	524 5.00	450 5.00	46.6 5.00	303 5.03	1180 25.3
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Sep-06-19 13:00	Sep-06-19 13:00	Sep-06-19 13:00	Sep-06-19 13:00	Sep-06-19 13:00	Sep-06-19 13:00
	<i>Analyzed:</i>	Sep-07-19 04:45	Sep-07-19 05:43	Sep-07-19 06:02	Sep-07-19 06:21	Sep-07-19 06:41	Sep-07-19 07:00
	<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	99.5 24.9	78.3 25.0	<25.0 25.0	<24.9 24.9	70.2 25.0
Motor Oil Range Hydrocarbons (MRO)		<24.9 24.9	42.1 24.9	45.1 25.0	<25.0 25.0	<24.9 24.9	38.5 25.0
Total GRO-DRO		<24.9 24.9	99.5 24.9	78.3 25.0	<25.0 25.0	<24.9 24.9	70.2 25.0
Total TPH		<24.9 24.9	142 24.9	123 25.0	<25.0 25.0	<24.9 24.9	109 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 636062

LT Environmental, Inc., Arvada, CO

Project Name: EMSUB 865

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Sep-05-19 10:40 am

Report Date: 09-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636062-007	636062-008	636062-009	636062-010	636062-011	636062-012
	<i>Field Id:</i>	SW07	SW08	SW09	SW10	SW11	SW12
	<i>Depth:</i>	0-4.5 ft	0-4.5 ft	0-8.5 ft	0-4.5 ft	0-4.5 ft	0-4.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-04-19 14:50	Sep-04-19 14:55	Sep-04-19 15:15	Sep-04-19 15:20	Sep-04-19 15:25	Sep-04-19 15:30
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Sep-06-19 11:15	Sep-06-19 11:15	Sep-06-19 11:15	Sep-06-19 11:15	Sep-06-19 11:15	Sep-06-19 11:15
	<i>Analyzed:</i>	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *
	<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	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00400 0.00400	<0.00398 0.00398	<0.00402 0.00402	<0.00398 0.00398	<0.00398 0.00398	<0.00399 0.00399
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Sep-06-19 14:50	Sep-06-19 14:50	Sep-06-19 14:50	Sep-06-19 14:50	Sep-06-19 14:50	Sep-06-19 14:50
	<i>Analyzed:</i>	Sep-06-19 17:01	Sep-06-19 17:07	Sep-06-19 17:14	Sep-06-19 17:33	Sep-06-19 17:39	Sep-06-19 17:59
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		343 4.96	319 4.98	183 5.00	454 5.03	185 4.98	144 5.05
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Sep-06-19 13:00	Sep-06-19 13:00	Sep-06-19 13:00	Sep-06-19 13:00	Sep-06-19 13:00	Sep-06-19 13:00
	<i>Analyzed:</i>	Sep-07-19 07:19	Sep-07-19 07:38	Sep-07-19 07:57	Sep-07-19 08:16	Sep-07-19 08:56	Sep-07-19 09:16
	<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)		<25.0 25.0	<24.9 24.9	<25.0 25.0	<25.0 25.0	<24.9 24.9	<24.9 24.9
Diesel Range Organics (DRO)		123 25.0	48.8 24.9	<25.0 25.0	<25.0 25.0	<24.9 24.9	<24.9 24.9
Motor Oil Range Hydrocarbons (MRO)		74.1 25.0	30.5 24.9	<25.0 25.0	<25.0 25.0	<24.9 24.9	<24.9 24.9
Total GRO-DRO		123 25.0	48.8 24.9	<25.0 25.0	<25.0 25.0	<24.9 24.9	<24.9 24.9
Total TPH		197 25.0	79.3 24.9	<25.0 25.0	<25.0 25.0	<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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 636062

LT Environmental, Inc., Arvada, CO

Project Name: EMSUB 865

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Sep-05-19 10:40 am

Report Date: 09-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636062-013	636062-014	636062-015	636062-016	636062-017	636062-018
	<i>Field Id:</i>	FS01	FS02	FS03	FS04	FS05	FS06
	<i>Depth:</i>	8.5- ft	4.5- ft	4.5- ft	4.5- ft	4.5- ft	4.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-04-19 15:45	Sep-04-19 15:50	Sep-04-19 15:55	Sep-04-19 16:15	Sep-04-19 16:20	Sep-04-19 16:25
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Sep-06-19 11:15	Sep-06-19 11:15	Sep-06-19 11:15	Sep-06-19 11:15	Sep-06-19 11:15	Sep-06-19 11:15
	<i>Analyzed:</i>	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *
	<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	<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199
Toluene		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199
Ethylbenzene		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199
m,p-Xylenes		<0.00397 0.00397	<0.00400 0.00400	<0.00396 0.00396	<0.00398 0.00398	<0.00398 0.00398	<0.00398 0.00398
o-Xylene		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199
Total Xylenes		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199
Total BTEX		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Sep-06-19 14:50	Sep-06-19 14:50	Sep-06-19 14:50	Sep-06-19 14:50	Sep-06-19 14:50	Sep-06-19 14:50
	<i>Analyzed:</i>	Sep-06-19 18:05	Sep-06-19 18:12	Sep-06-19 18:18	Sep-06-19 18:24	Sep-06-19 18:31	Sep-06-19 18:37
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		880 5.05	527 4.96	185 5.00	458 4.99	539 5.02	708 5.02
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Sep-06-19 13:00	Sep-06-19 13:00	Sep-06-19 13:00	Sep-06-19 13:00	Sep-06-19 13:00	Sep-06-19 13:00
	<i>Analyzed:</i>	Sep-07-19 09:36	Sep-07-19 09:56	Sep-07-19 10:16	Sep-07-19 10:36	Sep-07-19 10:56	Sep-07-19 11:15
	<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)		<25.0 25.0	<25.0 25.0	<24.9 24.9	<24.9 24.9	<25.0 25.0	<24.9 24.9
Diesel Range Organics (DRO)		<25.0 25.0	<25.0 25.0	<24.9 24.9	65.2 24.9	239 25.0	55.3 24.9
Motor Oil Range Hydrocarbons (MRO)		<25.0 25.0	<25.0 25.0	<24.9 24.9	35.8 24.9	129 25.0	37.7 24.9
Total GRO-DRO		<25.0 25.0	<25.0 25.0	<24.9 24.9	65.2 24.9	239 25.0	55.3 24.9
Total TPH		<25.0 25.0	<25.0 25.0	<24.9 24.9	101 24.9	368 25.0	93.0 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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 636062

LT Environmental, Inc., Arvada, CO

Project Name: EMSUB 865

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Sep-05-19 10:40 am

Report Date: 09-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636062-019	636062-020	636062-021			
	<i>Field Id:</i>	FS07	FS08	FS09			
	<i>Depth:</i>	4.5- ft	4.5- ft	4.5- ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Sep-04-19 16:30	Sep-04-19 16:35	Sep-04-19 16:40			
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Sep-06-19 11:15	Sep-06-19 11:15	Sep-06-19 11:15			
	<i>Analyzed:</i>	*** ** *	*** ** *	*** ** *			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200			
Toluene		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200			
Ethylbenzene		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200			
m,p-Xylenes		<0.00403 0.00403	<0.00402 0.00402	<0.00399 0.00399			
o-Xylene		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200			
Total Xylenes		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200			
Total BTEX		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200			
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Sep-06-19 15:40	Sep-06-19 15:40	Sep-06-19 15:40			
	<i>Analyzed:</i>	Sep-06-19 18:25	Sep-06-19 18:42	Sep-07-19 18:17			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		463 5.01	278 5.04	12.0 5.03			
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Sep-06-19 13:00	Sep-06-19 13:00	Sep-06-19 13:30			
	<i>Analyzed:</i>	Sep-07-19 11:35	Sep-07-19 11:54	Sep-06-19 16:16			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<24.9 24.9	<25.0 25.0	<24.9 24.9			
Diesel Range Organics (DRO)		<24.9 24.9	<25.0 25.0	<24.9 24.9			
Motor Oil Range Hydrocarbons (MRO)		<24.9 24.9	<25.0 25.0	<24.9 24.9			
Total GRO-DRO		<24.9 24.9	<25.0 25.0	<24.9 24.9			
Total TPH		<24.9 24.9	<25.0 25.0	<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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW01**
Lab Sample Id: 636062-001

Matrix: Soil
Date Collected: 09.04.19 14.00

Date Received: 09.05.19 10.40
Sample Depth: 0 - 8.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3100794

Date Prep: 09.06.19 14.50

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	698	5.00	mg/kg	09.06.19 16.09		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3100800

Date Prep: 09.06.19 13.00

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	09.07.19 04.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.07.19 04.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.07.19 04.45	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.07.19 04.45	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.07.19 04.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	09.07.19 04.45	
o-Terphenyl	84-15-1	87	%	70-135	09.07.19 04.45	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW01**
Lab Sample Id: 636062-001

Matrix: Soil
Date Collected: 09.04.19 14.00

Date Received: 09.05.19 10.40
Sample Depth: 0 - 8.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100789

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 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	09.06.19 20.50	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.06.19 20.50	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.06.19 20.50	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.06.19 20.50	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.06.19 20.50	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.06.19 20.50	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.06.19 20.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.06.19 20.50		
4-Bromofluorobenzene	460-00-4	108	%	70-130	09.06.19 20.50		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW02**
Lab Sample Id: 636062-002

Matrix: Soil
Date Collected: 09.04.19 14.05

Date Received: 09.05.19 10.40
Sample Depth: 0 - 4.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3100794

Date Prep: 09.06.19 14.50

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	524	5.00	mg/kg	09.06.19 16.15		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3100800

Date Prep: 09.06.19 13.00

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	09.07.19 05.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	99.5	24.9	mg/kg	09.07.19 05.43		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	42.1	24.9	mg/kg	09.07.19 05.43		1
Total GRO-DRO	PHC628	99.5	24.9	mg/kg	09.07.19 05.43		1
Total TPH	PHC635	142	24.9	mg/kg	09.07.19 05.43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	09.07.19 05.43	
o-Terphenyl	84-15-1	87	%	70-135	09.07.19 05.43	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW02**
Lab Sample Id: 636062-002

Matrix: Soil
Date Collected: 09.04.19 14.05

Date Received: 09.05.19 10.40
Sample Depth: 0 - 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.07.19 08.19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.07.19 08.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.07.19 08.19	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.07.19 08.19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.07.19 08.19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.07.19 08.19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.07.19 08.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	09.07.19 08.19		
1,4-Difluorobenzene	540-36-3	87	%	70-130	09.07.19 08.19		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW03** Matrix: Soil Date Received: 09.05.19 10.40
 Lab Sample Id: 636062-003 Date Collected: 09.04.19 14.10 Sample Depth: 0 - 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 09.06.19 14.50 Basis: Wet Weight
 Seq Number: 3100794 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	450	5.00	mg/kg	09.06.19 16.22		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.06.19 13.00 Basis: Wet Weight
 Seq Number: 3100800 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	09.07.19 06.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	78.3	25.0	mg/kg	09.07.19 06.02		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	45.1	25.0	mg/kg	09.07.19 06.02		1
Total GRO-DRO	PHC628	78.3	25.0	mg/kg	09.07.19 06.02		1
Total TPH	PHC635	123	25.0	mg/kg	09.07.19 06.02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	09.07.19 06.02	
o-Terphenyl	84-15-1	90	%	70-135	09.07.19 06.02	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW03**
Lab Sample Id: 636062-003

Matrix: Soil
Date Collected: 09.04.19 14.10

Date Received: 09.05.19 10.40
Sample Depth: 0 - 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 01.38	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.06.19 01.38	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.06.19 01.38	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.06.19 01.38	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.06.19 01.38	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.06.19 01.38	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.06.19 01.38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	09.06.19 01.38		
4-Bromofluorobenzene	460-00-4	109	%	70-130	09.06.19 01.38		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW04**
Lab Sample Id: 636062-004

Matrix: Soil
Date Collected: 09.04.19 14.15

Date Received: 09.05.19 10.40
Sample Depth: 0 - 4.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3100794

Date Prep: 09.06.19 14.50

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	46.6	5.00	mg/kg	09.06.19 18.57		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3100800

Date Prep: 09.06.19 13.00

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	09.07.19 06.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.07.19 06.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.07.19 06.21	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.07.19 06.21	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.07.19 06.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	09.07.19 06.21	
o-Terphenyl	84-15-1	90	%	70-135	09.07.19 06.21	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW04**
Lab Sample Id: 636062-004

Matrix: Soil
Date Collected: 09.04.19 14.15

Date Received: 09.05.19 10.40
Sample Depth: 0 - 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 01.58	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.06.19 01.58	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.06.19 01.58	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.06.19 01.58	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.06.19 01.58	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.06.19 01.58	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.06.19 01.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.06.19 01.58		
4-Bromofluorobenzene	460-00-4	104	%	70-130	09.06.19 01.58		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW05** Matrix: Soil Date Received: 09.05.19 10.40
 Lab Sample Id: 636062-005 Date Collected: 09.04.19 14.40 Sample Depth: 0 - 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 09.06.19 14.50 Basis: Wet Weight
 Seq Number: 3100794 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	303	5.03	mg/kg	09.06.19 19.03		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.06.19 13.00 Basis: Wet Weight
 Seq Number: 3100800 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	09.07.19 06.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.07.19 06.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.07.19 06.41	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.07.19 06.41	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.07.19 06.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	09.07.19 06.41	
o-Terphenyl	84-15-1	86	%	70-135	09.07.19 06.41	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW05**
Lab Sample Id: 636062-005

Matrix: Soil
Date Collected: 09.04.19 14.40

Date Received: 09.05.19 10.40
Sample Depth: 0 - 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 02.18	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.06.19 02.18	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.06.19 02.18	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	09.06.19 02.18	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.06.19 02.18	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.06.19 02.18	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.06.19 02.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	09.06.19 02.18		
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.06.19 02.18		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW06** Matrix: Soil Date Received: 09.05.19 10.40
 Lab Sample Id: 636062-006 Date Collected: 09.04.19 14.45 Sample Depth: 0 - 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 09.06.19 14.50 Basis: Wet Weight
 Seq Number: 3100794 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1180	25.3	mg/kg	09.06.19 19.10		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.06.19 13.00 Basis: Wet Weight
 Seq Number: 3100800 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	09.07.19 07.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	70.2	25.0	mg/kg	09.07.19 07.00		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	38.5	25.0	mg/kg	09.07.19 07.00		1
Total GRO-DRO	PHC628	70.2	25.0	mg/kg	09.07.19 07.00		1
Total TPH	PHC635	109	25.0	mg/kg	09.07.19 07.00		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	09.07.19 07.00	
o-Terphenyl	84-15-1	86	%	70-135	09.07.19 07.00	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW06**
Lab Sample Id: 636062-006

Matrix: Soil
Date Collected: 09.04.19 14.45

Date Received: 09.05.19 10.40
Sample Depth: 0 - 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 02.38	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.06.19 02.38	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.06.19 02.38	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.06.19 02.38	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.06.19 02.38	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.06.19 02.38	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.06.19 02.38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.06.19 02.38		
4-Bromofluorobenzene	460-00-4	107	%	70-130	09.06.19 02.38		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW07** Matrix: Soil Date Received: 09.05.19 10.40
 Lab Sample Id: 636062-007 Date Collected: 09.04.19 14.50 Sample Depth: 0 - 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 09.06.19 14.50 Basis: Wet Weight
 Seq Number: 3100794 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	343	4.96	mg/kg	09.06.19 17.01		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.06.19 13.00 Basis: Wet Weight
 Seq Number: 3100800 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	09.07.19 07.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	123	25.0	mg/kg	09.07.19 07.19		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	74.1	25.0	mg/kg	09.07.19 07.19		1
Total GRO-DRO	PHC628	123	25.0	mg/kg	09.07.19 07.19		1
Total TPH	PHC635	197	25.0	mg/kg	09.07.19 07.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	09.07.19 07.19	
o-Terphenyl	84-15-1	85	%	70-135	09.07.19 07.19	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW07**
Lab Sample Id: 636062-007

Matrix: Soil
Date Collected: 09.04.19 14.50

Date Received: 09.05.19 10.40
Sample Depth: 0 - 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 02.59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.06.19 02.59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.06.19 02.59	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	09.06.19 02.59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.06.19 02.59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.06.19 02.59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.06.19 02.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	09.06.19 02.59		
1,4-Difluorobenzene	540-36-3	106	%	70-130	09.06.19 02.59		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW08** Matrix: Soil Date Received: 09.05.19 10.40
 Lab Sample Id: 636062-008 Date Collected: 09.04.19 14.55 Sample Depth: 0 - 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 09.06.19 14.50 Basis: Wet Weight
 Seq Number: 3100794 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	319	4.98	mg/kg	09.06.19 17.07		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.06.19 13.00 Basis: Wet Weight
 Seq Number: 3100800 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	09.07.19 07.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	48.8	24.9	mg/kg	09.07.19 07.38		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	30.5	24.9	mg/kg	09.07.19 07.38		1
Total GRO-DRO	PHC628	48.8	24.9	mg/kg	09.07.19 07.38		1
Total TPH	PHC635	79.3	24.9	mg/kg	09.07.19 07.38		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	09.07.19 07.38	
o-Terphenyl	84-15-1	86	%	70-135	09.07.19 07.38	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW08**
Lab Sample Id: 636062-008

Matrix: Soil
Date Collected: 09.04.19 14.55

Date Received: 09.05.19 10.40
Sample Depth: 0 - 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 03.19	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.06.19 03.19	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.06.19 03.19	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.06.19 03.19	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.06.19 03.19	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.06.19 03.19	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.06.19 03.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	09.06.19 03.19		
1,4-Difluorobenzene	540-36-3	104	%	70-130	09.06.19 03.19		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW09** Matrix: Soil Date Received: 09.05.19 10.40
 Lab Sample Id: 636062-009 Date Collected: 09.04.19 15.15 Sample Depth: 0 - 8.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 09.06.19 14.50 Basis: Wet Weight
 Seq Number: 3100794 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	183	5.00	mg/kg	09.06.19 17.14		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.06.19 13.00 Basis: Wet Weight
 Seq Number: 3100800 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	09.07.19 07.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.07.19 07.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.07.19 07.57	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.07.19 07.57	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.07.19 07.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	09.07.19 07.57	
o-Terphenyl	84-15-1	91	%	70-135	09.07.19 07.57	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW09**
Lab Sample Id: 636062-009

Matrix: Soil
Date Collected: 09.04.19 15.15

Date Received: 09.05.19 10.40
Sample Depth: 0 - 8.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 03.39	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.06.19 03.39	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.06.19 03.39	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.06.19 03.39	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.06.19 03.39	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.06.19 03.39	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.06.19 03.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	09.06.19 03.39		
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.06.19 03.39		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW10**
Lab Sample Id: 636062-010

Matrix: Soil
Date Collected: 09.04.19 15.20

Date Received: 09.05.19 10.40
Sample Depth: 0 - 4.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3100794

Date Prep: 09.06.19 14.50

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	454	5.03	mg/kg	09.06.19 17.33		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3100800

Date Prep: 09.06.19 13.00

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	09.07.19 08.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.07.19 08.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.07.19 08.16	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.07.19 08.16	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.07.19 08.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	09.07.19 08.16	
o-Terphenyl	84-15-1	88	%	70-135	09.07.19 08.16	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW10**
Lab Sample Id: 636062-010

Matrix: Soil
Date Collected: 09.04.19 15.20

Date Received: 09.05.19 10.40
Sample Depth: 0 - 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 03.59	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.06.19 03.59	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.06.19 03.59	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.06.19 03.59	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.06.19 03.59	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.06.19 03.59	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.06.19 03.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	09.06.19 03.59		
1,4-Difluorobenzene	540-36-3	104	%	70-130	09.06.19 03.59		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW11**
Lab Sample Id: 636062-011

Matrix: Soil
Date Collected: 09.04.19 15.25

Date Received: 09.05.19 10.40
Sample Depth: 0 - 4.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3100794

Date Prep: 09.06.19 14.50

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	185	4.98	mg/kg	09.06.19 17.39		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3100800

Date Prep: 09.06.19 13.00

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	09.07.19 08.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.07.19 08.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.07.19 08.56	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.07.19 08.56	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.07.19 08.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	09.07.19 08.56	
o-Terphenyl	84-15-1	83	%	70-135	09.07.19 08.56	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW11**
Lab Sample Id: 636062-011

Matrix: Soil
Date Collected: 09.04.19 15.25

Date Received: 09.05.19 10.40
Sample Depth: 0 - 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 04.19	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.06.19 04.19	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.06.19 04.19	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.06.19 04.19	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.06.19 04.19	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.06.19 04.19	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.06.19 04.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	09.06.19 04.19		
1,4-Difluorobenzene	540-36-3	106	%	70-130	09.06.19 04.19		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW12**
Lab Sample Id: 636062-012

Matrix: Soil
Date Collected: 09.04.19 15.30

Date Received: 09.05.19 10.40
Sample Depth: 0 - 4.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3100794

Date Prep: 09.06.19 14.50

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	144	5.05	mg/kg	09.06.19 17.59		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3100800

Date Prep: 09.06.19 13.00

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	09.07.19 09.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.07.19 09.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.07.19 09.16	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.07.19 09.16	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.07.19 09.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	09.07.19 09.16	
o-Terphenyl	84-15-1	84	%	70-135	09.07.19 09.16	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **SW12**
Lab Sample Id: 636062-012

Matrix: Soil
Date Collected: 09.04.19 15.30

Date Received: 09.05.19 10.40
Sample Depth: 0 - 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 05.43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.06.19 05.43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.06.19 05.43	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.06.19 05.43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.06.19 05.43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.06.19 05.43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.06.19 05.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.06.19 05.43		
4-Bromofluorobenzene	460-00-4	99	%	70-130	09.06.19 05.43		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS01** Matrix: Soil Date Received: 09.05.19 10.40
 Lab Sample Id: 636062-013 Date Collected: 09.04.19 15.45 Sample Depth: 8.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 09.06.19 14.50 Basis: Wet Weight
 Seq Number: 3100794 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	880	5.05	mg/kg	09.06.19 18.05		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.06.19 13.00 Basis: Wet Weight
 Seq Number: 3100800 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	09.07.19 09.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.07.19 09.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.07.19 09.36	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.07.19 09.36	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.07.19 09.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	09.07.19 09.36	
o-Terphenyl	84-15-1	85	%	70-135	09.07.19 09.36	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS01**
Lab Sample Id: 636062-013

Matrix: Soil
Date Collected: 09.04.19 15.45

Date Received: 09.05.19 10.40
Sample Depth: 8.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 06.03	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.06.19 06.03	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.06.19 06.03	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	09.06.19 06.03	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	09.06.19 06.03	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	09.06.19 06.03	U	1
Total BTEX		<0.00198	0.00198	mg/kg	09.06.19 06.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	09.06.19 06.03		
1,4-Difluorobenzene	540-36-3	94	%	70-130	09.06.19 06.03		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS02** Matrix: Soil Date Received: 09.05.19 10.40
 Lab Sample Id: 636062-014 Date Collected: 09.04.19 15.50 Sample Depth: 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 09.06.19 14.50 Basis: Wet Weight
 Seq Number: 3100794 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	527	4.96	mg/kg	09.06.19 18.12		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.06.19 13.00 Basis: Wet Weight
 Seq Number: 3100800 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	09.07.19 09.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.07.19 09.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.07.19 09.56	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.07.19 09.56	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.07.19 09.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	09.07.19 09.56	
o-Terphenyl	84-15-1	90	%	70-135	09.07.19 09.56	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS02**
Lab Sample Id: 636062-014

Matrix: Soil
Date Collected: 09.04.19 15.50

Date Received: 09.05.19 10.40
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 06.23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.06.19 06.23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.06.19 06.23	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	09.06.19 06.23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.06.19 06.23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.06.19 06.23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.06.19 06.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	09.06.19 06.23		
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.06.19 06.23		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS03** Matrix: Soil Date Received: 09.05.19 10.40
 Lab Sample Id: 636062-015 Date Collected: 09.04.19 15.55 Sample Depth: 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 09.06.19 14.50 Basis: Wet Weight
 Seq Number: 3100794 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	185	5.00	mg/kg	09.06.19 18.18		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.06.19 13.00 Basis: Wet Weight
 Seq Number: 3100800 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	09.07.19 10.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.07.19 10.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.07.19 10.16	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.07.19 10.16	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.07.19 10.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	09.07.19 10.16	
o-Terphenyl	84-15-1	85	%	70-135	09.07.19 10.16	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS03**
Lab Sample Id: 636062-015

Matrix: Soil
Date Collected: 09.04.19 15.55

Date Received: 09.05.19 10.40
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 06.43	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.06.19 06.43	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.06.19 06.43	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	09.06.19 06.43	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	09.06.19 06.43	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	09.06.19 06.43	U	1
Total BTEX		<0.00198	0.00198	mg/kg	09.06.19 06.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.06.19 06.43		
4-Bromofluorobenzene	460-00-4	104	%	70-130	09.06.19 06.43		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS04**
Lab Sample Id: 636062-016

Matrix: Soil
Date Collected: 09.04.19 16.15

Date Received: 09.05.19 10.40
Sample Depth: 4.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3100794

Date Prep: 09.06.19 14.50

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	458	4.99	mg/kg	09.06.19 18.24		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3100800

Date Prep: 09.06.19 13.00

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	09.07.19 10.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	65.2	24.9	mg/kg	09.07.19 10.36		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	35.8	24.9	mg/kg	09.07.19 10.36		1
Total GRO-DRO	PHC628	65.2	24.9	mg/kg	09.07.19 10.36		1
Total TPH	PHC635	101	24.9	mg/kg	09.07.19 10.36		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	09.07.19 10.36	
o-Terphenyl	84-15-1	86	%	70-135	09.07.19 10.36	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS04**
Lab Sample Id: 636062-016

Matrix: Soil
Date Collected: 09.04.19 16.15

Date Received: 09.05.19 10.40
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 07.03	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.06.19 07.03	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.06.19 07.03	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.06.19 07.03	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.06.19 07.03	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.06.19 07.03	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.06.19 07.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	09.06.19 07.03		
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.06.19 07.03		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS05**
Lab Sample Id: 636062-017

Matrix: Soil
Date Collected: 09.04.19 16.20

Date Received: 09.05.19 10.40
Sample Depth: 4.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3100794

Date Prep: 09.06.19 14.50

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	539	5.02	mg/kg	09.06.19 18.31		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3100800

Date Prep: 09.06.19 13.00

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	09.07.19 10.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	239	25.0	mg/kg	09.07.19 10.56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	129	25.0	mg/kg	09.07.19 10.56		1
Total GRO-DRO	PHC628	239	25.0	mg/kg	09.07.19 10.56		1
Total TPH	PHC635	368	25.0	mg/kg	09.07.19 10.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	09.07.19 10.56	
o-Terphenyl	84-15-1	90	%	70-135	09.07.19 10.56	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS05**
Lab Sample Id: 636062-017

Matrix: Soil
Date Collected: 09.04.19 16.20

Date Received: 09.05.19 10.40
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 07.23	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.06.19 07.23	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.06.19 07.23	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.06.19 07.23	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.06.19 07.23	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.06.19 07.23	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.06.19 07.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.06.19 07.23		
4-Bromofluorobenzene	460-00-4	103	%	70-130	09.06.19 07.23		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS06**
Lab Sample Id: 636062-018

Matrix: Soil
Date Collected: 09.04.19 16.25

Date Received: 09.05.19 10.40
Sample Depth: 4.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3100794

Date Prep: 09.06.19 14.50

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	708	5.02	mg/kg	09.06.19 18.37		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3100800

Date Prep: 09.06.19 13.00

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	09.07.19 11.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	55.3	24.9	mg/kg	09.07.19 11.15		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	37.7	24.9	mg/kg	09.07.19 11.15		1
Total GRO-DRO	PHC628	55.3	24.9	mg/kg	09.07.19 11.15		1
Total TPH	PHC635	93.0	24.9	mg/kg	09.07.19 11.15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	09.07.19 11.15	
o-Terphenyl	84-15-1	87	%	70-135	09.07.19 11.15	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS06**
Lab Sample Id: 636062-018

Matrix: Soil
Date Collected: 09.04.19 16.25

Date Received: 09.05.19 10.40
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 07.44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.06.19 07.44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.06.19 07.44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.06.19 07.44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.06.19 07.44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.06.19 07.44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.06.19 07.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	09.06.19 07.44		
4-Bromofluorobenzene	460-00-4	110	%	70-130	09.06.19 07.44		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS07** Matrix: Soil Date Received: 09.05.19 10.40
 Lab Sample Id: 636062-019 Date Collected: 09.04.19 16.30 Sample Depth: 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 09.06.19 15.40 Basis: Wet Weight
 Seq Number: 3100795 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	463	5.01	mg/kg	09.06.19 18.25		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.06.19 13.00 Basis: Wet Weight
 Seq Number: 3100800 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	09.07.19 11.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.07.19 11.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.07.19 11.35	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.07.19 11.35	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.07.19 11.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	09.07.19 11.35	
o-Terphenyl	84-15-1	88	%	70-135	09.07.19 11.35	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS07**
Lab Sample Id: 636062-019

Matrix: Soil
Date Collected: 09.04.19 16.30

Date Received: 09.05.19 10.40
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 08.04	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.06.19 08.04	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.06.19 08.04	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	09.06.19 08.04	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.06.19 08.04	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.06.19 08.04	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.06.19 08.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	09.06.19 08.04		
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.06.19 08.04		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS08** Matrix: Soil Date Received: 09.05.19 10.40
 Lab Sample Id: 636062-020 Date Collected: 09.04.19 16.35 Sample Depth: 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 09.06.19 15.40 Basis: Wet Weight
 Seq Number: 3100795 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	278	5.04	mg/kg	09.06.19 18.42		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.06.19 13.00 Basis: Wet Weight
 Seq Number: 3100800 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	09.07.19 11.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.07.19 11.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.07.19 11.54	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.07.19 11.54	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.07.19 11.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	09.07.19 11.54	
o-Terphenyl	84-15-1	84	%	70-135	09.07.19 11.54	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS08**
Lab Sample Id: 636062-020

Matrix: Soil
Date Collected: 09.04.19 16.35

Date Received: 09.05.19 10.40
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 08.24	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.06.19 08.24	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.06.19 08.24	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.06.19 08.24	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.06.19 08.24	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.06.19 08.24	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.06.19 08.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	09.06.19 08.24		
1,4-Difluorobenzene	540-36-3	106	%	70-130	09.06.19 08.24		



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS09**
Lab Sample Id: 636062-021

Matrix: Soil
Date Collected: 09.04.19 16.40

Date Received: 09.05.19 10.40
Sample Depth: 4.5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3100795

Date Prep: 09.06.19 15.40

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	12.0	5.03	mg/kg	09.07.19 18.17		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3100798

Date Prep: 09.06.19 13.30

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	09.06.19 16.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.06.19 16.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.06.19 16.16	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.06.19 16.16	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.06.19 16.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	09.06.19 16.16	
o-Terphenyl	84-15-1	98	%	70-135	09.06.19 16.16	



Certificate of Analytical Results 636062

LT Environmental, Inc., Arvada, CO

EMSUB 865

Sample Id: **FS09**
Lab Sample Id: 636062-021

Matrix: Soil
Date Collected: 09.04.19 16.40

Date Received: 09.05.19 10.40
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3100788

Prep Method: SW5030B

% Moisture:

Date Prep: 09.06.19 11.15

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	09.06.19 08.44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.06.19 08.44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.06.19 08.44	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.06.19 08.44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.06.19 08.44	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.06.19 08.44	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.06.19 08.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	09.06.19 08.44		
1,4-Difluorobenzene	540-36-3	104	%	70-130	09.06.19 08.44		



Flagging Criteria

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

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

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

EMSUB 865

Analytical Method: Chloride by EPA 300

Seq Number: 3100794

MB Sample Id: 7685746-1-BLK

Matrix: Solid

LCS Sample Id: 7685746-1-BKS

Prep Method: E300P

Date Prep: 09.06.19

LCSD Sample Id: 7685746-1-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	262	105	261	104	90-110	0	20	mg/kg	09.06.19 15:30	

Analytical Method: Chloride by EPA 300

Seq Number: 3100795

MB Sample Id: 7685762-1-BLK

Matrix: Solid

LCS Sample Id: 7685762-1-BKS

Prep Method: E300P

Date Prep: 09.06.19

LCSD Sample Id: 7685762-1-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	256	102	255	102	90-110	0	20	mg/kg	09.06.19 18:13	

Analytical Method: Chloride by EPA 300

Seq Number: 3100794

Parent Sample Id: 636062-009

Matrix: Soil

MS Sample Id: 636062-009 S

Prep Method: E300P

Date Prep: 09.06.19

MSD Sample Id: 636062-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	183	250	460	111	457	110	90-110	1	20	mg/kg	09.06.19 17:20	X

Analytical Method: Chloride by EPA 300

Seq Number: 3100794

Parent Sample Id: 636134-002

Matrix: Soil

MS Sample Id: 636134-002 S

Prep Method: E300P

Date Prep: 09.06.19

MSD Sample Id: 636134-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	566	251	829	105	815	99	90-110	2	20	mg/kg	09.06.19 15:50	

Analytical Method: Chloride by EPA 300

Seq Number: 3100795

Parent Sample Id: 636033-002

Matrix: Soil

MS Sample Id: 636033-002 S

Prep Method: E300P

Date Prep: 09.06.19

MSD Sample Id: 636033-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	389	248	628	96	627	96	90-110	0	20	mg/kg	09.06.19 19:52	

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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.

EMSUB 865

Analytical Method: Chloride by EPA 300

Seq Number: 3100795

Parent Sample Id: 636062-019

Matrix: Soil

MS Sample Id: 636062-019 S

Prep Method: E300P

Date Prep: 09.06.19

MSD Sample Id: 636062-019 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	463	250	706	97	704	96	90-110	0	20	mg/kg	09.06.19 18:31	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100800

MB Sample Id: 7685728-1-BLK

Matrix: Solid

LCS Sample Id: 7685728-1-BKS

Prep Method: SW8015P

Date Prep: 09.06.19

LCSD Sample Id: 7685728-1-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	990	99	1000	100	70-135	1	20	mg/kg	09.07.19 04:07	
Diesel Range Organics (DRO)	<25.0	1000	929	93	942	94	70-135	1	20	mg/kg	09.07.19 04:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	96		124		122		70-135	%	09.07.19 04:07
o-Terphenyl	95		103		101		70-135	%	09.07.19 04:07

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100798

MB Sample Id: 7685729-1-BLK

Matrix: Solid

LCS Sample Id: 7685729-1-BKS

Prep Method: SW8015P

Date Prep: 09.06.19

LCSD Sample Id: 7685729-1-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	957	96	959	96	70-135	0	20	mg/kg	09.06.19 15:18	
Diesel Range Organics (DRO)	<25.0	1000	922	92	919	92	70-135	0	20	mg/kg	09.06.19 15:18	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		123		125		70-135	%	09.06.19 15:18
o-Terphenyl	99		99		100		70-135	%	09.06.19 15:18

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100800

Parent Sample Id: 636062-001

Matrix: Soil

MS Sample Id: 636062-001 S

Prep Method: SW8015P

Date Prep: 09.06.19

MSD Sample Id: 636062-001 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	936	94	936	94	70-135	0	20	mg/kg	09.07.19 05:05	
Diesel Range Organics (DRO)	<24.9	996	895	90	897	90	70-135	0	20	mg/kg	09.07.19 05:05	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		119		70-135	%	09.07.19 05:05
o-Terphenyl	94		96		70-135	%	09.07.19 05:05

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.

EMSUB 865

Analytical Method: TPH by SW8015 Mod

Seq Number: 3100798

Parent Sample Id: 636062-021

Matrix: Soil

MS Sample Id: 636062-021 S

Prep Method: SW8015P

Date Prep: 09.06.19

MSD Sample Id: 636062-021 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)	<15.0	999	894	89	905	91	70-135	1	20	mg/kg	09.06.19 16:35	
Diesel Range Organics (DRO)	<25.0	999	877	88	886	89	70-135	1	20	mg/kg	09.06.19 16:35	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		119		70-135	%	09.06.19 16:35
o-Terphenyl	92		93		70-135	%	09.06.19 16:35

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100789

MB Sample Id: 7685711-1-BLK

Matrix: Solid

LCS Sample Id: 7685711-1-BKS

Prep Method: SW5030B

Date Prep: 09.06.19

LCSD Sample Id: 7685711-1-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	0.0894	89	0.0966	97	70-130	8	35	mg/kg	09.06.19 09:50	
Toluene	<0.00200	0.100	0.0931	93	0.0995	100	70-130	7	35	mg/kg	09.06.19 09:50	
Ethylbenzene	<0.00200	0.100	0.102	102	0.109	109	70-130	7	35	mg/kg	09.06.19 09:50	
m,p-Xylenes	<0.00400	0.200	0.200	100	0.214	107	70-130	7	35	mg/kg	09.06.19 09:50	
o-Xylene	<0.00200	0.100	0.102	102	0.110	110	70-130	8	35	mg/kg	09.06.19 09:50	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		94		96		70-130	%	09.06.19 09:50
4-Bromofluorobenzene	101		109		109		70-130	%	09.06.19 09:50

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100788

MB Sample Id: 7685714-1-BLK

Matrix: Solid

LCS Sample Id: 7685714-1-BKS

Prep Method: SW5030B

Date Prep: 09.06.19

LCSD Sample Id: 7685714-1-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	0.0902	90	0.0899	90	70-130	0	35	mg/kg	09.06.19 09:59	
Toluene	<0.00200	0.100	0.0925	93	0.0931	93	70-130	1	35	mg/kg	09.06.19 09:59	
Ethylbenzene	<0.00200	0.100	0.109	109	0.112	112	70-130	3	35	mg/kg	09.06.19 09:59	
m,p-Xylenes	<0.00400	0.200	0.221	111	0.228	114	70-130	3	35	mg/kg	09.06.19 09:59	
o-Xylene	<0.00200	0.100	0.105	105	0.108	108	70-130	3	35	mg/kg	09.06.19 09:59	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		96		96		70-130	%	09.06.19 09:59
4-Bromofluorobenzene	93		112		115		70-130	%	09.06.19 09:59

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.

EMSUB 865

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100789

Parent Sample Id: 636044-001

Matrix: Soil

MS Sample Id: 636044-001 S

Prep Method: SW5030B

Date Prep: 09.06.19

MSD Sample Id: 636044-001 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	0.0385	39	0.0178	18	70-130	74	35	mg/kg	09.06.19 12:11	XF
Toluene	<0.00200	0.100	0.0362	36	0.0164	16	70-130	75	35	mg/kg	09.06.19 12:11	XF
Ethylbenzene	<0.00200	0.100	0.0320	32	0.0141	14	70-130	78	35	mg/kg	09.06.19 12:11	XF
m,p-Xylenes	<0.00401	0.200	0.0610	31	0.0269	13	70-130	78	35	mg/kg	09.06.19 12:11	XF
o-Xylene	<0.00200	0.100	0.0300	30	0.0135	14	70-130	76	35	mg/kg	09.06.19 12:11	XF

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		97		70-130	%	09.06.19 12:11
4-Bromofluorobenzene	105		107		70-130	%	09.06.19 12:11

Analytical Method: BTEX by EPA 8021B

Seq Number: 3100788

Parent Sample Id: 636062-002

Matrix: Soil

MS Sample Id: 636062-002 S

Prep Method: SW5030B

Date Prep: 09.06.19

MSD Sample Id: 636062-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0948	95	0.0648	65	70-130	38	35	mg/kg	09.06.19 11:56	XF
Toluene	<0.00199	0.0996	0.0875	88	0.0556	56	70-130	45	35	mg/kg	09.06.19 11:56	XF
Ethylbenzene	<0.00199	0.0996	0.0915	92	0.0481	48	70-130	62	35	mg/kg	09.06.19 11:56	XF
m,p-Xylenes	<0.00398	0.199	0.183	92	0.0916	46	70-130	67	35	mg/kg	09.06.19 11:56	XF
o-Xylene	<0.00199	0.0996	0.0865	87	0.0455	46	70-130	62	35	mg/kg	09.06.19 11:56	XF

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		105		70-130	%	09.06.19 11:56
4-Bromofluorobenzene	108		115		70-130	%	09.06.19 11:56

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

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

1036 002

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 3

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, TX 79705
Phone:	432.704.5178	Email:	ggreen@ltenv.com ; dmoir@ltenv.com

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

Project Name:	EM50 B 865	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	IRP-5562	Rush: 3-day	
Sampler's Name:	Garrett Green	Due Date: 9/11/14	

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
Temperature (°C):	3.4	Thermometer ID		
Received intact:	Yes ☒ No ☐	Correction Factor: -0.2		
Cooler Custody Seals:	Yes ☒ No ☐	Total Containers: 21		

1:55 PM

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 8015)	Chloride (EPA 8015)	Sample Comments									
SW01	S	9/4/14	1400	0'-8.5'	1	X	X	X										
SW02			1405	0'-4.5'	1	X	X	X										
SW03			1410		1	X	X	X										
SW04			1415		1	X	X	X										
SW05			1440		1	X	X	X										
SW06			1445		1	X	X	X										
SW07			1450		1	X	X	X										
SW08			1455		1	X	X	X										
SW09			1515	0'-8.5'	1	X	X	X										
SW10	A	A	1520	0'-4.5'	1	X	X	X										

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

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>	09/05/2014 8:00	<i>[Signature]</i>	<i>[Signature]</i>	09/05/2014 10:00

Work Order No.:

Page 5 of 5

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

Work Order Notes
TAT starts the day received by the

1A starts the day received by the lab, if received by 4:30pm Sample Comments

1631 / 245.1 / 7470 / 7471 : Hg

Date/Time	
06/05/19	10:40



Chain of Custody

Work Order No: _____

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 3 of 3

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, TX 79705
Phone:	432.704.5178	Email:	ggreen@ltenv.com ; dmoir@ltenv.com

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

Project Name:	EMSVB 865	Turn Around	☐ Routine ☐
Project Number:	18P-5562	Rush:	3 day
P.O. Number:		Due Date:	9/11
Sampler's Name:	Garrett Green		

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:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth
ES09	S	9/4/19	1640	4.5'

ANALYSIS REQUEST					Work Order Notes	
Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)			
1	X	X	X			

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

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

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>	09/05/19 8:00	<i>[Signature]</i>	<i>[Signature]</i>	09/05/19 10:40



Inter-Office Shipment

Page 1 of 3

IOS Number **47505**

Date/Time: 09/05/19 13:40

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.: 776167105560

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
636062-001	S	SW01	09/04/19 14:00	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-001	S	SW01	09/04/19 14:00	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-001	S	SW01	09/04/19 14:00	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636062-002	S	SW02	09/04/19 14:05	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-002	S	SW02	09/04/19 14:05	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636062-002	S	SW02	09/04/19 14:05	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-003	S	SW03	09/04/19 14:10	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-003	S	SW03	09/04/19 14:10	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-003	S	SW03	09/04/19 14:10	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636062-004	S	SW04	09/04/19 14:15	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-004	S	SW04	09/04/19 14:15	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636062-004	S	SW04	09/04/19 14:15	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-005	S	SW05	09/04/19 14:40	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636062-005	S	SW05	09/04/19 14:40	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-005	S	SW05	09/04/19 14:40	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-006	S	SW06	09/04/19 14:45	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-006	S	SW06	09/04/19 14:45	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636062-006	S	SW06	09/04/19 14:45	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-007	S	SW07	09/04/19 14:50	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636062-007	S	SW07	09/04/19 14:50	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-007	S	SW07	09/04/19 14:50	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-008	S	SW08	09/04/19 14:55	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-008	S	SW08	09/04/19 14:55	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-008	S	SW08	09/04/19 14:55	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636062-009	S	SW09	09/04/19 15:15	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	



Inter-Office Shipment

Page 2 of 3

IOS Number **47505**

Date/Time: 09/05/19 13:40

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.: 776167105560

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
636062-009	S	SW09	09/04/19 15:15	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-009	S	SW09	09/04/19 15:15	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636062-010	S	SW10	09/04/19 15:20	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-010	S	SW10	09/04/19 15:20	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636062-010	S	SW10	09/04/19 15:20	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-011	S	SW11	09/04/19 15:25	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-011	S	SW11	09/04/19 15:25	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-011	S	SW11	09/04/19 15:25	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636062-012	S	SW12	09/04/19 15:30	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636062-012	S	SW12	09/04/19 15:30	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-012	S	SW12	09/04/19 15:30	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-013	S	FS01	09/04/19 15:45	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636062-013	S	FS01	09/04/19 15:45	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-013	S	FS01	09/04/19 15:45	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-014	S	FS02	09/04/19 15:50	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636062-014	S	FS02	09/04/19 15:50	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-014	S	FS02	09/04/19 15:50	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-015	S	FS03	09/04/19 15:55	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636062-015	S	FS03	09/04/19 15:55	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-015	S	FS03	09/04/19 15:55	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-016	S	FS04	09/04/19 16:15	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PF	
636062-016	S	FS04	09/04/19 16:15	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-016	S	FS04	09/04/19 16:15	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-017	S	FS05	09/04/19 16:20	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-017	S	FS05	09/04/19 16:20	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	

Inter Office Shipment or Sample Comments:



Inter-Office Shipment

Page 3 of 3

IOS Number **47505**

Date/Time: 09/05/19 13:40

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.: 776167105560

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
636062-017	S	FS05	09/04/19 16:20	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PI	
636062-018	S	FS06	09/04/19 16:25	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-018	S	FS06	09/04/19 16:25	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PI	
636062-018	S	FS06	09/04/19 16:25	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-019	S	FS07	09/04/19 16:30	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-019	S	FS07	09/04/19 16:30	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PI	
636062-019	S	FS07	09/04/19 16:30	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-020	S	FS08	09/04/19 16:35	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	
636062-020	S	FS08	09/04/19 16:35	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-020	S	FS08	09/04/19 16:35	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PI	
636062-021	S	FS09	09/04/19 16:40	SW8021B	BTEX by EPA 8021B	09/09/19	09/18/19	JKR	BR4FBZ BZ BZME EBZ X	
636062-021	S	FS09	09/04/19 16:40	SW8015MOD_NM	TPH by SW8015 Mod	09/09/19	09/18/19	JKR	GRO-DRO PHCC10C28 PI	
636062-021	S	FS09	09/04/19 16:40	E300_CL	Chloride by EPA 300	09/09/19	03/02/20	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By:

Elizabeth McClellan

Date Relinquished:

09/05/2019

Received By:

Brianna Teel

Date Received:

Cooler Temperature: 09/06/2019 11:12

2.1



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 47505

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 09/05/2019 01:40 PM

Received By: Brianna Teel

Date Received: 09/06/2019 11:12 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.1
#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: 09/06/2019



Client: LT Environmental, Inc.

Date/ Time Received: 09/05/2019 10:40:00 AM

Work Order #: 636062

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
#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: 09/05/2019

Checklist reviewed by:

Jessica Kramer

Date: 09/05/2019

Analytical Report 649269

for
LT Environmental, Inc.

Project Manager: Dan Moir

EMSU B 865

012919105

17-JAN-20

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

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

Xenco-Dallas (EPA Lab Code: TX01468):

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

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

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

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

Xenco-Carlsbad (LELAP): Louisiana (05092)

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

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

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



17-JAN-20

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **649269**

EMSU B 865

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) 649269. 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. 649269 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 649269****LT Environmental, Inc., Arvada, CO**

EMSU B 865

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH07	S	01-15-20 11:40	5 ft	649269-001
BH07A	S	01-15-20 12:00	10 ft	649269-002
BH07B	S	01-15-20 12:20	18 ft	649269-003
BH07C	S	01-15-20 12:40	19 ft	649269-004
BH07D	S	01-15-20 13:00	23 ft	649269-005
BH07E	S	01-15-20 13:30	29 ft	649269-006
BH07F	S	01-15-20 14:10	31 ft	649269-007
BH08	S	01-15-20 15:00	1 ft	649269-008
BH08A	S	01-15-20 15:40	7 ft	649269-009
BH08B	S	01-15-20 15:55	12 ft	649269-010
BH08C	S	01-15-20 16:05	18 ft	649269-011
BH08D	S	01-15-20 16:10	19 ft	649269-012
BH08E	S	01-15-20 16:20	24 ft	649269-013
BH08F	S	01-15-20 16:25	31 ft	649269-014



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: EMSU B 865

Project ID: 012919105
Work Order Number(s): 649269

Report Date: 17-JAN-20
Date Received: 01/16/2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3113589 BTEX by EPA 8021B

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



Certificate of Analysis Summary 649269

LT Environmental, Inc., Arvada, CO

Project Name: EMSU B 865

Project Id: 012919105

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Jan-16-20 09:37 am

Report Date: 17-JAN-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	649269-001	649269-002	649269-003	649269-004	649269-005	649269-006
	<i>Field Id:</i>	BH07	BH07A	BH07B	BH07C	BH07D	BH07E
	<i>Depth:</i>	5- ft	10- ft	18- ft	19- ft	23- ft	29- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-15-20 11:40	Jan-15-20 12:00	Jan-15-20 12:20	Jan-15-20 12:40	Jan-15-20 13:00	Jan-15-20 13:30
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-16-20 11:00	Jan-16-20 11:00	Jan-16-20 11:00	Jan-16-20 11:00	Jan-16-20 11:00	Jan-16-20 11:00
	<i>Analyzed:</i>	Jan-16-20 14:10	Jan-16-20 14:27	Jan-16-20 14:45	Jan-16-20 15:02	Jan-16-20 16:11	Jan-16-20 16:29
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00197 0.00197	<0.00200 0.00200	<0.00198 0.00198	<0.00197 0.00197	<0.00200 0.00200	<0.00198 0.00198
Toluene		<0.00197 0.00197	<0.00200 0.00200	<0.00198 0.00198	<0.00197 0.00197	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene		<0.00197 0.00197	<0.00200 0.00200	<0.00198 0.00198	<0.00197 0.00197	<0.00200 0.00200	<0.00198 0.00198
m,p-Xylenes		<0.00394 0.00394	<0.00401 0.00401	<0.00396 0.00396	<0.00394 0.00394	<0.00399 0.00399	<0.00396 0.00396
o-Xylene		<0.00197 0.00197	<0.00200 0.00200	<0.00198 0.00198	<0.00197 0.00197	<0.00200 0.00200	<0.00198 0.00198
Total Xylenes		<0.00197 0.00197	<0.00200 0.00200	<0.00198 0.00198	<0.00197 0.00197	<0.00200 0.00200	<0.00198 0.00198
Total BTEX		<0.00197 0.00197	<0.00200 0.00200	<0.00198 0.00198	<0.00197 0.00197	<0.00200 0.00200	<0.00198 0.00198
Chloride by EPA 300	<i>Extracted:</i>	Jan-16-20 11:45	Jan-16-20 11:45	Jan-16-20 11:45	Jan-16-20 11:45	Jan-16-20 11:45	Jan-16-20 11:45
	<i>Analyzed:</i>	Jan-16-20 14:22	Jan-16-20 14:38	Jan-16-20 14:44	Jan-16-20 14:49	Jan-16-20 15:05	Jan-16-20 15:11
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		199 10.0	298 9.98	901 49.6	777 50.1	787 50.2	188 9.98
TPH by SW8015 Mod	<i>Extracted:</i>	Jan-16-20 13:45	Jan-16-20 13:45	Jan-16-20 13:45	Jan-16-20 13:45	Jan-16-20 13:45	Jan-16-20 13:45
	<i>Analyzed:</i>	Jan-16-20 21:35	Jan-16-20 18:58	Jan-16-20 19:18	Jan-16-20 19:18	Jan-16-20 19:37	Jan-16-20 19:37
	<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)		<49.8 49.8	<50.2 50.2	<50.3 50.3	<50.2 50.2	<50.3 50.3	<50.2 50.2
Diesel Range Organics (DRO)		320 49.8	<50.2 50.2	<50.3 50.3	<50.2 50.2	<50.3 50.3	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		96.3 49.8	<50.2 50.2	<50.3 50.3	<50.2 50.2	<50.3 50.3	<50.2 50.2
Total GRO-DRO		320 49.8	<50.2 50.2	<50.3 50.3	<50.2 50.2	<50.3 50.3	<50.2 50.2
Total TPH		416 49.8	<50.2 50.2	<50.3 50.3	<50.2 50.2	<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 Analysis Summary 649269

LT Environmental, Inc., Arvada, CO

Project Name: EMSU B 865

Project Id: 012919105

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Jan-16-20 09:37 am

Report Date: 17-JAN-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	649269-007	649269-008	649269-009	649269-010	649269-011	649269-012
	<i>Field Id:</i>	BH07F	BH08	BH08A	BH08B	BH08C	BH08D
	<i>Depth:</i>	31- ft	1- ft	7- ft	12- ft	18- ft	19- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-15-20 14:10	Jan-15-20 15:00	Jan-15-20 15:40	Jan-15-20 15:55	Jan-15-20 16:05	Jan-15-20 16:10
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-16-20 11:00	Jan-16-20 11:00	Jan-16-20 11:00	Jan-16-20 11:00	Jan-16-20 11:00	Jan-16-20 11:00
	<i>Analyzed:</i>	Jan-16-20 16:46	Jan-16-20 17:03	Jan-16-20 17:21	Jan-16-20 17:38	Jan-16-20 17:56	Jan-16-20 18:13
	<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	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00401 0.00401	<0.00396 0.00396	<0.00396 0.00396	<0.00401 0.00401	<0.00401 0.00401	<0.00399 0.00399
o-Xylene		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Jan-16-20 11:45	Jan-16-20 11:45	Jan-16-20 11:45	Jan-16-20 11:45	Jan-16-20 11:45	Jan-16-20 11:45
	<i>Analyzed:</i>	Jan-16-20 15:16	Jan-16-20 15:21	Jan-16-20 15:27	Jan-16-20 15:32	Jan-16-20 15:37	Jan-16-20 15:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		606 49.6	268 49.4	1240 49.9	1310 50.1	1330 49.8	1340 49.6
TPH by SW8015 Mod	<i>Extracted:</i>	Jan-16-20 13:45	Jan-16-20 13:45	Jan-16-20 13:45	Jan-16-20 13:45	Jan-16-20 13:45	Jan-16-20 13:45
	<i>Analyzed:</i>	Jan-16-20 19:57	Jan-16-20 20:17	Jan-16-20 20:17	Jan-16-20 20:36	Jan-16-20 20:36	Jan-16-20 20:56
	<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)		<50.0 50.0	<50.0 50.0	<50.2 50.2	<50.0 50.0	<50.3 50.3	<50.0 50.0
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0	<50.2 50.2	<50.0 50.0	<50.3 50.3	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<50.2 50.2	<50.0 50.0	<50.3 50.3	<50.0 50.0
Total GRO-DRO		<50.0 50.0	<50.0 50.0	<50.2 50.2	<50.0 50.0	<50.3 50.3	<50.0 50.0
Total TPH		<50.0 50.0	<50.0 50.0	<50.2 50.2	<50.0 50.0	<50.3 50.3	<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 649269

LT Environmental, Inc., Arvada, CO

Project Name: EMSU B 865

Project Id: 012919105

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Jan-16-20 09:37 am

Report Date: 17-JAN-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	649269-013	649269-014				
	Field Id:	BH08E	BH08F				
	Depth:	24- ft	31- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Jan-15-20 16:20	Jan-15-20 16:25				
BTEX by EPA 8021B	Extracted:	Jan-16-20 11:00	Jan-16-20 11:00				
	Analyzed:	Jan-16-20 18:30	Jan-16-20 18:48				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00199 0.00199	<0.00200 0.00200				
Toluene		<0.00199 0.00199	<0.00200 0.00200				
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200				
m,p-Xylenes		<0.00398 0.00398	<0.00399 0.00399				
o-Xylene		<0.00199 0.00199	<0.00200 0.00200				
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200				
Total BTEX		<0.00199 0.00199	<0.00200 0.00200				
Chloride by EPA 300	Extracted:	Jan-16-20 11:45	Jan-16-20 11:45				
	Analyzed:	Jan-16-20 16:10	Jan-16-20 16:15				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		1070 49.9	696 49.4				
TPH by SW8015 Mod	Extracted:	Jan-16-20 13:45	Jan-16-20 13:45				
	Analyzed:	Jan-16-20 20:56	Jan-16-20 21:16				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<49.9 49.9				
Diesel Range Organics (DRO)		<49.9 49.9	<49.9 49.9				
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<49.9 49.9				
Total GRO-DRO		<49.9 49.9	<49.9 49.9				
Total TPH		<49.9 49.9	<49.9 49.9				

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH07**
Lab Sample Id: 649269-001

Matrix: Soil
Date Collected: 01.15.20 11.40

Date Received: 01.16.20 09.37
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113519

Date Prep: 01.16.20 11.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	199	10.0	mg/kg	01.16.20 14.22		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113564

Date Prep: 01.16.20 13.45

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	01.16.20 21.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	320	49.8	mg/kg	01.16.20 21.35		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	96.3	49.8	mg/kg	01.16.20 21.35		1
Total GRO-DRO	PHC628	320	49.8	mg/kg	01.16.20 21.35		1
Total TPH	PHC635	416	49.8	mg/kg	01.16.20 21.35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	01.16.20 21.35	
o-Terphenyl	84-15-1	102	%	70-135	01.16.20 21.35	



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH07**
Lab Sample Id: 649269-001

Matrix: Soil
Date Collected: 01.15.20 11.40

Date Received: 01.16.20 09.37
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.00

Basis: Wet Weight

Seq Number: 3113589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00197	0.00197	mg/kg	01.16.20 14.10	U	1
Toluene	108-88-3	<0.00197	0.00197	mg/kg	01.16.20 14.10	U	1
Ethylbenzene	100-41-4	<0.00197	0.00197	mg/kg	01.16.20 14.10	U	1
m,p-Xylenes	179601-23-1	<0.00394	0.00394	mg/kg	01.16.20 14.10	U	1
o-Xylene	95-47-6	<0.00197	0.00197	mg/kg	01.16.20 14.10	U	1
Total Xylenes	1330-20-7	<0.00197	0.00197	mg/kg	01.16.20 14.10	U	1
Total BTEX		<0.00197	0.00197	mg/kg	01.16.20 14.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	01.16.20 14.10		
1,4-Difluorobenzene	540-36-3	104	%	70-130	01.16.20 14.10		



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH07A**
Lab Sample Id: 649269-002

Matrix: Soil
Date Collected: 01.15.20 12.00

Date Received: 01.16.20 09.37
Sample Depth: 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113519

Date Prep: 01.16.20 11.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	298	9.98	mg/kg	01.16.20 14.38		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113564

Date Prep: 01.16.20 13.45

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	01.16.20 18.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.16.20 18.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.16.20 18.58	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.16.20 18.58	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.16.20 18.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	01.16.20 18.58	
o-Terphenyl	84-15-1	101	%	70-135	01.16.20 18.58	



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH07A**
Lab Sample Id: 649269-002

Matrix: Soil
Date Collected: 01.15.20 12.00

Date Received: 01.16.20 09.37
Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.00

Basis: Wet Weight

Seq Number: 3113589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.16.20 14.27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.16.20 14.27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.16.20 14.27	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.16.20 14.27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.16.20 14.27	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.16.20 14.27	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.16.20 14.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	01.16.20 14.27		
4-Bromofluorobenzene	460-00-4	97	%	70-130	01.16.20 14.27		



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH07B**
Lab Sample Id: 649269-003

Matrix: Soil
Date Collected: 01.15.20 12.20

Date Received: 01.16.20 09.37
Sample Depth: 18 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113519

Date Prep: 01.16.20 11.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	901	49.6	mg/kg	01.16.20 14.44		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113564

Date Prep: 01.16.20 13.45

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	01.16.20 19.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	01.16.20 19.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	01.16.20 19.18	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	01.16.20 19.18	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	01.16.20 19.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	01.16.20 19.18	
o-Terphenyl	84-15-1	97	%	70-135	01.16.20 19.18	



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH07B**
Lab Sample Id: 649269-003

Matrix: Soil
Date Collected: 01.15.20 12.20

Date Received: 01.16.20 09.37
Sample Depth: 18 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.00

Basis: Wet Weight

Seq Number: 3113589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	01.16.20 14.45	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	01.16.20 14.45	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	01.16.20 14.45	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	01.16.20 14.45	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	01.16.20 14.45	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	01.16.20 14.45	U	1
Total BTEX		<0.00198	0.00198	mg/kg	01.16.20 14.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	01.16.20 14.45		
4-Bromofluorobenzene	460-00-4	97	%	70-130	01.16.20 14.45		



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH07C**
Lab Sample Id: 649269-004

Matrix: Soil
Date Collected: 01.15.20 12.40

Date Received: 01.16.20 09.37
Sample Depth: 19 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113519

Date Prep: 01.16.20 11.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	777	50.1	mg/kg	01.16.20 14.49		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113564

Date Prep: 01.16.20 13.45

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	01.16.20 19.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.16.20 19.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.16.20 19.18	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.16.20 19.18	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.16.20 19.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	01.16.20 19.18	
o-Terphenyl	84-15-1	100	%	70-135	01.16.20 19.18	



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH07C**
Lab Sample Id: 649269-004

Matrix: Soil
Date Collected: 01.15.20 12.40

Date Received: 01.16.20 09.37
Sample Depth: 19 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.00

Basis: Wet Weight

Seq Number: 3113589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00197	0.00197	mg/kg	01.16.20 15.02	U	1
Toluene	108-88-3	<0.00197	0.00197	mg/kg	01.16.20 15.02	U	1
Ethylbenzene	100-41-4	<0.00197	0.00197	mg/kg	01.16.20 15.02	U	1
m,p-Xylenes	179601-23-1	<0.00394	0.00394	mg/kg	01.16.20 15.02	U	1
o-Xylene	95-47-6	<0.00197	0.00197	mg/kg	01.16.20 15.02	U	1
Total Xylenes	1330-20-7	<0.00197	0.00197	mg/kg	01.16.20 15.02	U	1
Total BTEX		<0.00197	0.00197	mg/kg	01.16.20 15.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	01.16.20 15.02		
4-Bromofluorobenzene	460-00-4	103	%	70-130	01.16.20 15.02		



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH07D**
Lab Sample Id: 649269-005

Matrix: Soil
Date Collected: 01.15.20 13.00

Date Received: 01.16.20 09.37
Sample Depth: 23 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113519

Date Prep: 01.16.20 11.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	787	50.2	mg/kg	01.16.20 15.05		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113564

Date Prep: 01.16.20 13.45

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	01.16.20 19.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	01.16.20 19.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	01.16.20 19.37	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	01.16.20 19.37	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	01.16.20 19.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	01.16.20 19.37	
o-Terphenyl	84-15-1	101	%	70-135	01.16.20 19.37	



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH07D**
Lab Sample Id: 649269-005

Matrix: Soil
Date Collected: 01.15.20 13.00

Date Received: 01.16.20 09.37
Sample Depth: 23 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.00

Basis: Wet Weight

Seq Number: 3113589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.16.20 16.11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.16.20 16.11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.16.20 16.11	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.16.20 16.11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.16.20 16.11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.16.20 16.11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.16.20 16.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	01.16.20 16.11		
4-Bromofluorobenzene	460-00-4	99	%	70-130	01.16.20 16.11		



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH07E**
Lab Sample Id: 649269-006

Matrix: Soil
Date Collected: 01.15.20 13.30

Date Received: 01.16.20 09.37
Sample Depth: 29 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113519

Date Prep: 01.16.20 11.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	188	9.98	mg/kg	01.16.20 15.11		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113564

Date Prep: 01.16.20 13.45

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	01.16.20 19.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.16.20 19.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.16.20 19.37	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.16.20 19.37	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.16.20 19.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	01.16.20 19.37	
o-Terphenyl	84-15-1	92	%	70-135	01.16.20 19.37	



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH07E**
Lab Sample Id: 649269-006

Matrix: Soil
Date Collected: 01.15.20 13.30

Date Received: 01.16.20 09.37
Sample Depth: 29 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.00

Basis: Wet Weight

Seq Number: 3113589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	01.16.20 16.29	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	01.16.20 16.29	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	01.16.20 16.29	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	01.16.20 16.29	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	01.16.20 16.29	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	01.16.20 16.29	U	1
Total BTEX		<0.00198	0.00198	mg/kg	01.16.20 16.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	01.16.20 16.29		
4-Bromofluorobenzene	460-00-4	97	%	70-130	01.16.20 16.29		



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH07F**
Lab Sample Id: 649269-007

Matrix: Soil
Date Collected: 01.15.20 14.10

Date Received: 01.16.20 09.37
Sample Depth: 31 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113519

Date Prep: 01.16.20 11.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	606	49.6	mg/kg	01.16.20 15.16		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113564

Date Prep: 01.16.20 13.45

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	01.16.20 19.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.16.20 19.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.16.20 19.57	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.16.20 19.57	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.16.20 19.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	01.16.20 19.57	
o-Terphenyl	84-15-1	98	%	70-135	01.16.20 19.57	



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH07F**
Lab Sample Id: 649269-007

Matrix: Soil
Date Collected: 01.15.20 14.10

Date Received: 01.16.20 09.37
Sample Depth: 31 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.00

Basis: Wet Weight

Seq Number: 3113589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.16.20 16.46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.16.20 16.46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.16.20 16.46	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.16.20 16.46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.16.20 16.46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.16.20 16.46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.16.20 16.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	01.16.20 16.46		
1,4-Difluorobenzene	540-36-3	98	%	70-130	01.16.20 16.46		



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH08**
Lab Sample Id: 649269-008

Matrix: Soil
Date Collected: 01.15.20 15.00

Date Received: 01.16.20 09.37
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113519

Date Prep: 01.16.20 11.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	268	49.4	mg/kg	01.16.20 15.21		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113564

Date Prep: 01.16.20 13.45

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	01.16.20 20.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.16.20 20.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.16.20 20.17	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.16.20 20.17	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.16.20 20.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	01.16.20 20.17	
o-Terphenyl	84-15-1	103	%	70-135	01.16.20 20.17	



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH08**
Lab Sample Id: 649269-008

Matrix: Soil
Date Collected: 01.15.20 15.00

Date Received: 01.16.20 09.37
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.00

Basis: Wet Weight

Seq Number: 3113589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	01.16.20 17.03	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	01.16.20 17.03	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	01.16.20 17.03	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	01.16.20 17.03	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	01.16.20 17.03	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	01.16.20 17.03	U	1
Total BTEX		<0.00198	0.00198	mg/kg	01.16.20 17.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	01.16.20 17.03		
1,4-Difluorobenzene	540-36-3	101	%	70-130	01.16.20 17.03		



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH08A**
Lab Sample Id: 649269-009

Matrix: Soil
Date Collected: 01.15.20 15.40

Date Received: 01.16.20 09.37
Sample Depth: 7 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113519

Date Prep: 01.16.20 11.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1240	49.9	mg/kg	01.16.20 15.27		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113564

Date Prep: 01.16.20 13.45

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	01.16.20 20.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.16.20 20.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.16.20 20.17	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.16.20 20.17	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.16.20 20.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	01.16.20 20.17	
o-Terphenyl	84-15-1	103	%	70-135	01.16.20 20.17	



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH08A**
Lab Sample Id: 649269-009

Matrix: Soil
Date Collected: 01.15.20 15.40

Date Received: 01.16.20 09.37
Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.00

Basis: Wet Weight

Seq Number: 3113589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	01.16.20 17.21	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	01.16.20 17.21	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	01.16.20 17.21	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	01.16.20 17.21	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	01.16.20 17.21	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	01.16.20 17.21	U	1
Total BTEX		<0.00198	0.00198	mg/kg	01.16.20 17.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	01.16.20 17.21		
1,4-Difluorobenzene	540-36-3	98	%	70-130	01.16.20 17.21		



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH08B**
Lab Sample Id: 649269-010

Matrix: Soil
Date Collected: 01.15.20 15.55

Date Received: 01.16.20 09.37
Sample Depth: 12 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113519

Date Prep: 01.16.20 11.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1310	50.1	mg/kg	01.16.20 15.32		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113564

Date Prep: 01.16.20 13.45

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	01.16.20 20.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.16.20 20.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.16.20 20.36	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.16.20 20.36	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.16.20 20.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	01.16.20 20.36	
o-Terphenyl	84-15-1	99	%	70-135	01.16.20 20.36	



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH08B**
Lab Sample Id: 649269-010

Matrix: Soil
Date Collected: 01.15.20 15.55

Date Received: 01.16.20 09.37
Sample Depth: 12 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.00

Basis: Wet Weight

Seq Number: 3113589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.16.20 17.38	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.16.20 17.38	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.16.20 17.38	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.16.20 17.38	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.16.20 17.38	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.16.20 17.38	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.16.20 17.38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	01.16.20 17.38		
4-Bromofluorobenzene	460-00-4	103	%	70-130	01.16.20 17.38		



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH08C**
Lab Sample Id: 649269-011

Matrix: Soil
Date Collected: 01.15.20 16.05

Date Received: 01.16.20 09.37
Sample Depth: 18 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113519

Date Prep: 01.16.20 11.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1330	49.8	mg/kg	01.16.20 15.37		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113564

Date Prep: 01.16.20 13.45

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	01.16.20 20.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	01.16.20 20.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	01.16.20 20.36	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	01.16.20 20.36	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	01.16.20 20.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	01.16.20 20.36	
o-Terphenyl	84-15-1	100	%	70-135	01.16.20 20.36	



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH08C**
Lab Sample Id: 649269-011

Matrix: Soil
Date Collected: 01.15.20 16.05

Date Received: 01.16.20 09.37
Sample Depth: 18 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.00

Basis: Wet Weight

Seq Number: 3113589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.16.20 17.56	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.16.20 17.56	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.16.20 17.56	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.16.20 17.56	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.16.20 17.56	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.16.20 17.56	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.16.20 17.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	01.16.20 17.56		
4-Bromofluorobenzene	460-00-4	99	%	70-130	01.16.20 17.56		



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH08D**
Lab Sample Id: 649269-012

Matrix: Soil
Date Collected: 01.15.20 16.10

Date Received: 01.16.20 09.37
Sample Depth: 19 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113519

Date Prep: 01.16.20 11.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1340	49.6	mg/kg	01.16.20 15.54		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113564

Date Prep: 01.16.20 13.45

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	01.16.20 20.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.16.20 20.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.16.20 20.56	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.16.20 20.56	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.16.20 20.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	01.16.20 20.56	
o-Terphenyl	84-15-1	97	%	70-135	01.16.20 20.56	



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH08D**
Lab Sample Id: 649269-012

Matrix: Soil
Date Collected: 01.15.20 16.10

Date Received: 01.16.20 09.37
Sample Depth: 19 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.00

Basis: Wet Weight

Seq Number: 3113589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.16.20 18.13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.16.20 18.13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.16.20 18.13	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.16.20 18.13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.16.20 18.13	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.16.20 18.13	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.16.20 18.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	01.16.20 18.13		
1,4-Difluorobenzene	540-36-3	102	%	70-130	01.16.20 18.13		



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH08E**
Lab Sample Id: 649269-013

Matrix: Soil
Date Collected: 01.15.20 16.20

Date Received: 01.16.20 09.37
Sample Depth: 24 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113519

Date Prep: 01.16.20 11.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1070	49.9	mg/kg	01.16.20 16.10		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113564

Date Prep: 01.16.20 13.45

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	01.16.20 20.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	01.16.20 20.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.16.20 20.56	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	01.16.20 20.56	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.16.20 20.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	01.16.20 20.56	
o-Terphenyl	84-15-1	99	%	70-135	01.16.20 20.56	



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH08E**
Lab Sample Id: 649269-013

Matrix: Soil
Date Collected: 01.15.20 16.20

Date Received: 01.16.20 09.37
Sample Depth: 24 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.00

Basis: Wet Weight

Seq Number: 3113589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.16.20 18.30	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.16.20 18.30	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.16.20 18.30	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.16.20 18.30	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.16.20 18.30	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.16.20 18.30	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.16.20 18.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	01.16.20 18.30		
1,4-Difluorobenzene	540-36-3	98	%	70-130	01.16.20 18.30		



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH08F**
Lab Sample Id: 649269-014

Matrix: Soil
Date Collected: 01.15.20 16.25

Date Received: 01.16.20 09.37
Sample Depth: 31 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113519

Date Prep: 01.16.20 11.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	696	49.4	mg/kg	01.16.20 16.15		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113564

Date Prep: 01.16.20 13.45

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	01.16.20 21.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	01.16.20 21.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.16.20 21.16	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	01.16.20 21.16	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.16.20 21.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	01.16.20 21.16	
o-Terphenyl	84-15-1	103	%	70-135	01.16.20 21.16	



Certificate of Analytical Results 649269

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH08F**
Lab Sample Id: 649269-014

Matrix: Soil
Date Collected: 01.15.20 16.25

Date Received: 01.16.20 09.37
Sample Depth: 31 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.00

Basis: Wet Weight

Seq Number: 3113589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.16.20 18.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.16.20 18.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.16.20 18.48	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.16.20 18.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.16.20 18.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.16.20 18.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.16.20 18.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	01.16.20 18.48		
4-Bromofluorobenzene	460-00-4	100	%	70-130	01.16.20 18.48		



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.

EMSU B 865

Analytical Method: Chloride by EPA 300

Seq Number: 3113519

MB Sample Id: 7694535-1-BLK

Matrix: Solid

LCS Sample Id: 7694535-1-BKS

Prep Method: E300P

Date Prep: 01.16.20

LCSD Sample Id: 7694535-1-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	260	104	261	104	90-110	0	20	mg/kg	01.16.20 14:06	

Analytical Method: Chloride by EPA 300

Seq Number: 3113519

Parent Sample Id: 649269-001

Matrix: Soil

MS Sample Id: 649269-001 S

Prep Method: E300P

Date Prep: 01.16.20

MSD Sample Id: 649269-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	199	201	410	105	412	106	90-110	0	20	mg/kg	01.16.20 14:27	

Analytical Method: Chloride by EPA 300

Seq Number: 3113519

Parent Sample Id: 649269-011

Matrix: Soil

MS Sample Id: 649269-011 S

Prep Method: E300P

Date Prep: 01.16.20

MSD Sample Id: 649269-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	1330	200	1540	105	1550	110	90-110	1	20	mg/kg	01.16.20 15:43	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3113564

MB Sample Id: 7694526-1-BLK

Matrix: Solid

LCS Sample Id: 7694526-1-BKS

Prep Method: SW8015P

Date Prep: 01.16.20

LCSD Sample Id: 7694526-1-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	1100	110	930	93	70-135	17	35	mg/kg	01.16.20 17:39	
Diesel Range Organics (DRO)	<50.0	1000	1120	112	1040	104	70-135	7	35	mg/kg	01.16.20 17:39	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		131		112		70-135	%	01.16.20 17:39
o-Terphenyl	93		126		108		70-135	%	01.16.20 17:39

Analytical Method: TPH by SW8015 Mod

Seq Number: 3113564

Matrix: Solid

MB Sample Id: 7694526-1-BLK

Prep Method: SW8015P

Date Prep: 01.16.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	01.16.20 17:39	

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

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

EMSU B 865

Analytical Method: TPH by SW8015 Mod

Seq Number: 3113564

Parent Sample Id: 649267-001

Matrix: Soil

MS Sample Id: 649267-001 S

Prep Method: SW8015P

Date Prep: 01.16.20

MSD Sample Id: 649267-001 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)	<50.2	1000	1020	102	990	99	70-135	3	35	mg/kg	01.16.20 18:18	
Diesel Range Organics (DRO)	<50.2	1000	1120	112	1140	114	70-135	2	35	mg/kg	01.16.20 18:18	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		119		70-135	%	01.16.20 18:18
o-Terphenyl	112		115		70-135	%	01.16.20 18:18

Analytical Method: BTEX by EPA 8021B

Seq Number: 3113589

MB Sample Id: 7694539-1-BLK

Matrix: Solid

LCS Sample Id: 7694539-1-BKS

Prep Method: SW5030B

Date Prep: 01.16.20

LCSD Sample Id: 7694539-1-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	0.0881	88	0.0946	95	70-130	7	35	mg/kg	01.16.20 10:58	
Toluene	<0.00200	0.100	0.0890	89	0.0954	95	70-130	7	35	mg/kg	01.16.20 10:58	
Ethylbenzene	<0.00200	0.100	0.0875	88	0.0940	94	71-129	7	35	mg/kg	01.16.20 10:58	
m,p-Xylenes	<0.00400	0.200	0.181	91	0.195	98	70-135	7	35	mg/kg	01.16.20 10:58	
o-Xylene	<0.00200	0.100	0.0882	88	0.0948	95	71-133	7	35	mg/kg	01.16.20 10:58	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		97		98		70-130	%	01.16.20 10:58
4-Bromofluorobenzene	95		96		97		70-130	%	01.16.20 10:58

Analytical Method: BTEX by EPA 8021B

Seq Number: 3113589

Parent Sample Id: 649113-001

Matrix: Soil

MS Sample Id: 649113-001 S

Prep Method: SW5030B

Date Prep: 01.16.20

MSD Sample Id: 649113-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0974	98	0.0959	97	70-130	2	35	mg/kg	01.16.20 11:33	
Toluene	<0.00199	0.0994	0.0970	98	0.0959	97	70-130	1	35	mg/kg	01.16.20 11:33	
Ethylbenzene	<0.00199	0.0994	0.0939	94	0.0932	94	71-129	1	35	mg/kg	01.16.20 11:33	
m,p-Xylenes	<0.00398	0.199	0.193	97	0.192	97	70-135	1	35	mg/kg	01.16.20 11:33	
o-Xylene	<0.00199	0.0994	0.0941	95	0.0935	94	71-133	1	35	mg/kg	01.16.20 11:33	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		97		70-130	%	01.16.20 11:33
4-Bromofluorobenzene	95		94		70-130	%	01.16.20 11:33

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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

Analytical Report 649590

for
LT Environmental, Inc.

Project Manager: Dan Moir

EMSU B 865

012919105

28-JAN-20

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

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

Xenco-Dallas (EPA Lab Code: TX01468):

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

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

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

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

Xenco-Carlsbad (LELAP): Louisiana (05092)

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

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

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



28-JAN-20

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **649590**

EMSU B 865

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) 649590. 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. 649590 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 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH10	S	01-17-20 10:15	1 ft	649590-001
BH10A	S	01-17-20 10:20	9 ft	649590-002
BH10B	S	01-17-20 10:25	17 ft	649590-003
BH10C	S	01-17-20 10:30	19 ft	649590-004
BH10D	S	01-17-20 10:40	22 ft	649590-005
BH10E	S	01-17-20 11:00	31 ft	649590-006
BH11	S	01-17-20 11:30	1 ft	649590-007
BH11A	S	01-17-20 11:40	10 ft	649590-008
BH11B	S	01-17-20 11:50	18 ft	649590-009
BH11C	S	01-17-20 12:00	19 ft	649590-010
BH11D	S	01-17-20 12:10	23 ft	649590-011
BH11E	S	01-17-20 12:20	31 ft	649590-012
BH12	S	01-17-20 13:45	1 ft	649590-013
BH12A	S	01-17-20 14:00	9 ft	649590-014
BH12B	S	01-17-20 14:10	18 ft	649590-015
BH12C	S	01-17-20 14:20	19 ft	649590-016
BH12D	S	01-17-20 14:45	23 ft	649590-017
BH12E	S	01-17-20 15:10	31 ft	649590-018

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: EMSU B 865**

Project ID: 012919105
Work Order Number(s): 649590

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

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3114611 BTEX by EPA 8021B

Lab Sample ID 649590-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). 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: 649590-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018

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

Outlier/s are due to possible matrix interference.



Certificate of Analysis Summary 649590

LT Environmental, Inc., Arvada, CO

Project Name: EMSU B 865

Project Id: 012919105

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Jan-20-20 09:00 am

Report Date: 28-JAN-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	649590-001	649590-002	649590-003	649590-004	649590-005	649590-006
	Field Id:	BH10	BH10A	BH10B	BH10C	BH10D	BH10E
	Depth:	1- ft	9- ft	17- ft	19- ft	22- ft	31- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jan-17-20 10:15	Jan-17-20 10:20	Jan-17-20 10:25	Jan-17-20 10:30	Jan-17-20 10:40	Jan-17-20 11:00
BTEX by EPA 8021B SUB: T104704400-19-19	Extracted:	Jan-26-20 13:30	Jan-26-20 13:30	Jan-26-20 13:30	Jan-26-20 13:30	Jan-26-20 13:30	Jan-26-20 13:30
	Analyzed:	Jan-27-20 13:34	Jan-27-20 14:14	Jan-27-20 14:34	Jan-27-20 14:54	Jan-27-20 15:15	Jan-27-20 15:35
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
	Toluene	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00402 0.00402	<0.00398 0.00398	<0.00399 0.00399	<0.00397 0.00397	<0.00400 0.00400
o-Xylene		<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Chloride by EPA 300 SUB: T104704400-19-19	Extracted:	Jan-21-20 16:50	Jan-21-20 16:50	Jan-21-20 16:50	Jan-21-20 16:50	Jan-21-20 16:50	Jan-21-20 16:50
	Analyzed:	Jan-22-20 05:02	Jan-22-20 05:09	Jan-22-20 05:30	Jan-22-20 05:37	Jan-22-20 05:44	Jan-22-20 05:51
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	9.13 5.02	68.9 4.96	802 4.99	418 5.01	46.0 5.05	8.88 5.05
TPH by SW8015 Mod SUB: T104704400-19-19	Extracted:	Jan-23-20 15:00	Jan-23-20 15:00	Jan-23-20 15:00	Jan-23-20 15:00	Jan-23-20 15:00	Jan-23-20 15:00
	Analyzed:	Jan-23-20 22:53	Jan-23-20 23:12	Jan-23-20 23:31	Jan-23-20 23:50	Jan-24-20 00:09	Jan-24-20 00:28
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Gasoline Range Hydrocarbons (GRO)	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9
	Diesel Range Organics (DRO)	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9
Total GRO-DRO		<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9
Total TPH		<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 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

Version: 1.0%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 649590

LT Environmental, Inc., Arvada, CO

Project Name: EMSU B 865

Project Id: 012919105

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Jan-20-20 09:00 am

Report Date: 28-JAN-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	649590-007	649590-008	649590-009	649590-010	649590-011	649590-012
	<i>Field Id:</i>	BH11	BH11A	BH11B	BH11C	BH11D	BH11E
	<i>Depth:</i>	1- ft	10- ft	18- ft	19- ft	23- ft	31- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-17-20 11:30	Jan-17-20 11:40	Jan-17-20 11:50	Jan-17-20 12:00	Jan-17-20 12:10	Jan-17-20 12:20
BTEX by EPA 8021B SUB: T104704400-19-19	<i>Extracted:</i>	Jan-26-20 13:30	Jan-26-20 13:30	Jan-26-20 13:30	Jan-26-20 13:30	Jan-26-20 13:30	Jan-26-20 13:30
	<i>Analyzed:</i>	Jan-27-20 15:55	Jan-27-20 16:15	Jan-27-20 16:35	Jan-27-20 17:54	Jan-27-20 18:14	Jan-27-20 18:34
	<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	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Toluene		<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene		<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
m,p-Xylenes		<0.00402 0.00402	<0.00396 0.00396	<0.00402 0.00402	<0.00400 0.00400	<0.00399 0.00399	<0.00397 0.00397
o-Xylene		<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Total Xylenes		<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Total BTEX		<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Chloride by EPA 300 SUB: T104704400-19-19	<i>Extracted:</i>	Jan-21-20 16:50	Jan-21-20 16:50	Jan-21-20 16:50	Jan-21-20 17:00	Jan-21-20 17:00	Jan-21-20 17:00
	<i>Analyzed:</i>	Jan-22-20 05:58	Jan-22-20 06:05	Jan-22-20 06:12	Jan-21-20 21:33	Jan-21-20 21:12	Jan-21-20 21:40
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.02 5.02	1160 4.99	1210 4.96	1140 4.99	40.5 5.02	616 4.97
TPH by SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	Jan-23-20 15:00	Jan-23-20 15:00	Jan-23-20 15:00	Jan-23-20 15:00	Jan-23-20 15:00	Jan-23-20 15:00
	<i>Analyzed:</i>	Jan-24-20 00:47	Jan-24-20 01:06	Jan-24-20 01:25	Jan-24-20 02:03	Jan-24-20 02:22	Jan-24-20 02:42
	<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	<49.9 49.9
Diesel Range Organics (DRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9
Total GRO-DRO		<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9
Total TPH		<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 649590

LT Environmental, Inc., Arvada, CO

Project Name: EMSU B 865

Project Id: 012919105

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Jan-20-20 09:00 am

Report Date: 28-JAN-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	649590-013	649590-014	649590-015	649590-016	649590-017	649590-018
	Field Id:	BH12	BH12A	BH12B	BH12C	BH12D	BH12E
	Depth:	1- ft	9- ft	18- ft	19- ft	23- ft	31- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jan-17-20 13:45	Jan-17-20 14:00	Jan-17-20 14:10	Jan-17-20 14:20	Jan-17-20 14:45	Jan-17-20 15:10
BTEX by EPA 8021B SUB: T104704400-19-19	Extracted:	Jan-26-20 13:30	Jan-26-20 13:30	Jan-26-20 13:30	Jan-26-20 13:30	Jan-26-20 13:30	Jan-26-20 13:30
	Analyzed:	Jan-27-20 18:54	Jan-27-20 19:15	Jan-27-20 19:35	Jan-27-20 19:55	Jan-27-20 20:15	Jan-27-20 20:35
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
m,p-Xylenes		<0.00399 0.00399	<0.00402 0.00402	<0.00398 0.00398	<0.00399 0.00399	<0.00397 0.00397	<0.00401 0.00401
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Chloride by EPA 300 SUB: T104704400-19-19	Extracted:	Jan-21-20 17:00	Jan-21-20 17:00	Jan-21-20 17:00	Jan-21-20 17:00	Jan-21-20 17:00	Jan-21-20 17:00
	Analyzed:	Jan-21-20 21:47	Jan-21-20 21:54	Jan-21-20 22:15	Jan-21-20 22:22	Jan-21-20 22:29	Jan-21-20 22:36
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		77.4 5.04	42.6 5.01	119 4.96	153 4.99	31.0 5.00	38.7 5.03
TPH by SW8015 Mod SUB: T104704400-19-19	Extracted:	Jan-23-20 15:00	Jan-23-20 15:00	Jan-23-20 15:00	Jan-23-20 15:00	Jan-23-20 15:00	Jan-23-20 15:00
	Analyzed:	Jan-24-20 03:01	Jan-24-20 03:20	Jan-24-20 03:40	Jan-24-20 03:59	Jan-24-20 04:18	Jan-24-20 04:37
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0
Diesel Range Organics (DRO)		<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0
Total GRO-DRO		<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0
Total TPH		<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH10**
Lab Sample Id: 649590-001

Matrix: Soil
Date Collected: 01.17.20 10.15

Date Received: 01.20.20 09.00
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3114029

Date Prep: 01.21.20 16.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.13	5.02	mg/kg	01.22.20 05.02		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3114322

Date Prep: 01.23.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	01.23.20 22.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.23.20 22.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.23.20 22.53	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.23.20 22.53	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.23.20 22.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	73	%	70-135	01.23.20 22.53	
o-Terphenyl	84-15-1	76	%	70-135	01.23.20 22.53	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH10**
Lab Sample Id: 649590-001

Matrix: Soil
Date Collected: 01.17.20 10.15

Date Received: 01.20.20 09.00
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3114611

Prep Method: SW5030B

% Moisture:

Date Prep: 01.26.20 13.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.27.20 13.34	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.27.20 13.34	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.27.20 13.34	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.27.20 13.34	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.27.20 13.34	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.27.20 13.34	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.27.20 13.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	01.27.20 13.34		
4-Bromofluorobenzene	460-00-4	91	%	70-130	01.27.20 13.34		



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH10A**
Lab Sample Id: 649590-002

Matrix: Soil
Date Collected: 01.17.20 10.20

Date Received: 01.20.20 09.00
Sample Depth: 9 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3114029

Date Prep: 01.21.20 16.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	68.9	4.96	mg/kg	01.22.20 05.09		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3114322

Date Prep: 01.23.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	01.23.20 23.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	01.23.20 23.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.23.20 23.12	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	01.23.20 23.12	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.23.20 23.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	74	%	70-135	01.23.20 23.12	
o-Terphenyl	84-15-1	77	%	70-135	01.23.20 23.12	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH10A**
Lab Sample Id: 649590-002

Matrix: Soil
Date Collected: 01.17.20 10.20

Date Received: 01.20.20 09.00
Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3114611

Date Prep: 01.26.20 13.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.27.20 14.14	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.27.20 14.14	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.27.20 14.14	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.27.20 14.14	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.27.20 14.14	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.27.20 14.14	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.27.20 14.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	78	%	70-130	01.27.20 14.14		
1,4-Difluorobenzene	540-36-3	111	%	70-130	01.27.20 14.14		



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH10B** Matrix: Soil Date Received: 01.20.20 09.00
 Lab Sample Id: 649590-003 Date Collected: 01.17.20 10.25 Sample Depth: 17 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 01.21.20 16.50 Basis: Wet Weight
 Seq Number: 3114029 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	802	4.99	mg/kg	01.22.20 05.30		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 01.23.20 15.00 Basis: Wet Weight
 Seq Number: 3114322 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	01.23.20 23.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.23.20 23.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.23.20 23.31	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.23.20 23.31	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.23.20 23.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-135	01.23.20 23.31	
o-Terphenyl	84-15-1	80	%	70-135	01.23.20 23.31	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH10B**
Lab Sample Id: 649590-003

Matrix: Soil
Date Collected: 01.17.20 10.25

Date Received: 01.20.20 09.00
Sample Depth: 17 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3114611

Date Prep: 01.26.20 13.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.27.20 14.34	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.27.20 14.34	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.27.20 14.34	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.27.20 14.34	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.27.20 14.34	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.27.20 14.34	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.27.20 14.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	83	%	70-130	01.27.20 14.34		
1,4-Difluorobenzene	540-36-3	113	%	70-130	01.27.20 14.34		



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH10C**
Lab Sample Id: 649590-004

Matrix: Soil
Date Collected: 01.17.20 10.30

Date Received: 01.20.20 09.00
Sample Depth: 19 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3114029

Date Prep: 01.21.20 16.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	418	5.01	mg/kg	01.22.20 05.37		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3114322

Date Prep: 01.23.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	01.23.20 23.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	01.23.20 23.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.23.20 23.50	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	01.23.20 23.50	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.23.20 23.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	75	%	70-135	01.23.20 23.50	
o-Terphenyl	84-15-1	80	%	70-135	01.23.20 23.50	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH10C**
Lab Sample Id: 649590-004

Matrix: Soil
Date Collected: 01.17.20 10.30

Date Received: 01.20.20 09.00
Sample Depth: 19 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3114611

Date Prep: 01.26.20 13.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.27.20 14.54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.27.20 14.54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.27.20 14.54	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.27.20 14.54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.27.20 14.54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.27.20 14.54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.27.20 14.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	83	%	70-130	01.27.20 14.54		
1,4-Difluorobenzene	540-36-3	115	%	70-130	01.27.20 14.54		



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH10D** Matrix: Soil Date Received: 01.20.20 09.00
 Lab Sample Id: 649590-005 Date Collected: 01.17.20 10.40 Sample Depth: 22 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 01.21.20 16.50 Basis: Wet Weight
 Seq Number: 3114029 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	46.0	5.05	mg/kg	01.22.20 05.44		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 01.23.20 15.00 Basis: Wet Weight
 Seq Number: 3114322 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	01.24.20 00.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.24.20 00.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.24.20 00.09	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.24.20 00.09	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.24.20 00.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	74	%	70-135	01.24.20 00.09	
o-Terphenyl	84-15-1	77	%	70-135	01.24.20 00.09	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH10D**
Lab Sample Id: 649590-005

Matrix: Soil
Date Collected: 01.17.20 10.40

Date Received: 01.20.20 09.00
Sample Depth: 22 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3114611

Prep Method: SW5030B

% Moisture:

Date Prep: 01.26.20 13.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	01.27.20 15.15	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	01.27.20 15.15	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	01.27.20 15.15	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	01.27.20 15.15	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	01.27.20 15.15	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	01.27.20 15.15	U	1
Total BTEX		<0.00198	0.00198	mg/kg	01.27.20 15.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	117	%	70-130	01.27.20 15.15		
4-Bromofluorobenzene	460-00-4	83	%	70-130	01.27.20 15.15		



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH10E** Matrix: Soil Date Received: 01.20.20 09.00
 Lab Sample Id: 649590-006 Date Collected: 01.17.20 11.00 Sample Depth: 31 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 01.21.20 16.50 Basis: Wet Weight
 Seq Number: 3114029 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.88	5.05	mg/kg	01.22.20 05.51		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 01.23.20 15.00 Basis: Wet Weight
 Seq Number: 3114322 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	01.24.20 00.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	01.24.20 00.28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.24.20 00.28	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	01.24.20 00.28	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.24.20 00.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	75	%	70-135	01.24.20 00.28	
o-Terphenyl	84-15-1	78	%	70-135	01.24.20 00.28	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH10E**
Lab Sample Id: 649590-006

Matrix: Soil
Date Collected: 01.17.20 11.00

Date Received: 01.20.20 09.00
Sample Depth: 31 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3114611

Prep Method: SW5030B

% Moisture:

Date Prep: 01.26.20 13.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.27.20 15.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.27.20 15.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.27.20 15.35	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.27.20 15.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.27.20 15.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.27.20 15.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.27.20 15.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	01.27.20 15.35		
4-Bromofluorobenzene	460-00-4	79	%	70-130	01.27.20 15.35		



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH11**
Lab Sample Id: 649590-007

Matrix: Soil
Date Collected: 01.17.20 11.30

Date Received: 01.20.20 09.00
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3114029

Date Prep: 01.21.20 16.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.02	5.02	mg/kg	01.22.20 05.58	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3114322

Date Prep: 01.23.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	01.24.20 00.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	01.24.20 00.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.24.20 00.47	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	01.24.20 00.47	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.24.20 00.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-135	01.24.20 00.47	
o-Terphenyl	84-15-1	79	%	70-135	01.24.20 00.47	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH11** Matrix: Soil Date Received: 01.20.20 09.00
 Lab Sample Id: 649590-007 Date Collected: 01.17.20 11.30 Sample Depth: 1 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: KTL % Moisture:
 Analyst: KTL Date Prep: 01.26.20 13.30 Basis: Wet Weight
 Seq Number: 3114611 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.27.20 15.55	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.27.20 15.55	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.27.20 15.55	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.27.20 15.55	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.27.20 15.55	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.27.20 15.55	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.27.20 15.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	76	%	70-130	01.27.20 15.55		
1,4-Difluorobenzene	540-36-3	113	%	70-130	01.27.20 15.55		



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH11A** Matrix: Soil Date Received: 01.20.20 09.00
 Lab Sample Id: 649590-008 Date Collected: 01.17.20 11.40 Sample Depth: 10 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 01.21.20 16.50 Basis: Wet Weight
 Seq Number: 3114029 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1160	4.99	mg/kg	01.22.20 06.05		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 01.23.20 15.00 Basis: Wet Weight
 Seq Number: 3114322 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	01.24.20 01.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	01.24.20 01.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	01.24.20 01.06	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	01.24.20 01.06	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	01.24.20 01.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	75	%	70-135	01.24.20 01.06	
o-Terphenyl	84-15-1	77	%	70-135	01.24.20 01.06	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH11A**
Lab Sample Id: 649590-008

Matrix: Soil
Date Collected: 01.17.20 11.40

Date Received: 01.20.20 09.00
Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3114611

Date Prep: 01.26.20 13.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	01.27.20 16.15	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	01.27.20 16.15	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	01.27.20 16.15	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	01.27.20 16.15	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	01.27.20 16.15	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	01.27.20 16.15	U	1
Total BTEX		<0.00198	0.00198	mg/kg	01.27.20 16.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	80	%	70-130	01.27.20 16.15		
1,4-Difluorobenzene	540-36-3	112	%	70-130	01.27.20 16.15		



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH11B** Matrix: Soil Date Received: 01.20.20 09.00
 Lab Sample Id: 649590-009 Date Collected: 01.17.20 11.50 Sample Depth: 18 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 01.21.20 16.50 Basis: Wet Weight
 Seq Number: 3114029 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1210	4.96	mg/kg	01.22.20 06.12		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 01.23.20 15.00 Basis: Wet Weight
 Seq Number: 3114322 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	01.24.20 01.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.24.20 01.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.24.20 01.25	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.24.20 01.25	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.24.20 01.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	01.24.20 01.25	
o-Terphenyl	84-15-1	82	%	70-135	01.24.20 01.25	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH11B**
Lab Sample Id: 649590-009

Matrix: Soil
Date Collected: 01.17.20 11.50

Date Received: 01.20.20 09.00
Sample Depth: 18 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3114611

Date Prep: 01.26.20 13.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.27.20 16.35	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.27.20 16.35	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.27.20 16.35	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.27.20 16.35	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.27.20 16.35	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.27.20 16.35	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.27.20 16.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	77	%	70-130	01.27.20 16.35		
1,4-Difluorobenzene	540-36-3	113	%	70-130	01.27.20 16.35		



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH11C** Matrix: Soil Date Received: 01.20.20 09.00
 Lab Sample Id: 649590-010 Date Collected: 01.17.20 12.00 Sample Depth: 19 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 01.21.20 17.00 Basis: Wet Weight
 Seq Number: 3114032 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1140	4.99	mg/kg	01.21.20 21.33		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 01.23.20 15.00 Basis: Wet Weight
 Seq Number: 3114322 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	01.24.20 02.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	01.24.20 02.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.24.20 02.03	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	01.24.20 02.03	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.24.20 02.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-135	01.24.20 02.03	
o-Terphenyl	84-15-1	79	%	70-135	01.24.20 02.03	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH11C**
Lab Sample Id: 649590-010

Matrix: Soil
Date Collected: 01.17.20 12.00

Date Received: 01.20.20 09.00
Sample Depth: 19 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3114611

Prep Method: SW5030B

% Moisture:

Date Prep: 01.26.20 13.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.27.20 17.54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.27.20 17.54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.27.20 17.54	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.27.20 17.54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.27.20 17.54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.27.20 17.54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.27.20 17.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	01.27.20 17.54		
4-Bromofluorobenzene	460-00-4	71	%	70-130	01.27.20 17.54		



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH11D**
Lab Sample Id: 649590-011

Matrix: Soil
Date Collected: 01.17.20 12.10

Date Received: 01.20.20 09.00
Sample Depth: 23 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3114032

Date Prep: 01.21.20 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	40.5	5.02	mg/kg	01.21.20 21.12		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3114322

Date Prep: 01.23.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	01.24.20 02.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.24.20 02.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.24.20 02.22	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.24.20 02.22	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.24.20 02.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-135	01.24.20 02.22	
o-Terphenyl	84-15-1	82	%	70-135	01.24.20 02.22	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH11D**
Lab Sample Id: 649590-011

Matrix: Soil
Date Collected: 01.17.20 12.10

Date Received: 01.20.20 09.00
Sample Depth: 23 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3114611

Prep Method: SW5030B

% Moisture:

Date Prep: 01.26.20 13.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.27.20 18.14	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.27.20 18.14	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.27.20 18.14	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.27.20 18.14	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.27.20 18.14	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.27.20 18.14	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.27.20 18.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	01.27.20 18.14		
4-Bromofluorobenzene	460-00-4	80	%	70-130	01.27.20 18.14		



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH11E**
Lab Sample Id: 649590-012

Matrix: Soil
Date Collected: 01.17.20 12.20

Date Received: 01.20.20 09.00
Sample Depth: 31 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3114032

Date Prep: 01.21.20 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	616	4.97	mg/kg	01.21.20 21.40		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3114322

Date Prep: 01.23.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	01.24.20 02.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	01.24.20 02.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.24.20 02.42	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	01.24.20 02.42	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.24.20 02.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-135	01.24.20 02.42	
o-Terphenyl	84-15-1	80	%	70-135	01.24.20 02.42	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH11E**
Lab Sample Id: 649590-012

Matrix: Soil
Date Collected: 01.17.20 12.20

Date Received: 01.20.20 09.00
Sample Depth: 31 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3114611

Prep Method: SW5030B

% Moisture:

Date Prep: 01.26.20 13.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	01.27.20 18.34	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	01.27.20 18.34	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	01.27.20 18.34	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	01.27.20 18.34	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	01.27.20 18.34	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	01.27.20 18.34	U	1
Total BTEX		<0.00198	0.00198	mg/kg	01.27.20 18.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	79	%	70-130	01.27.20 18.34		
1,4-Difluorobenzene	540-36-3	114	%	70-130	01.27.20 18.34		



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH12**
Lab Sample Id: 649590-013

Matrix: Soil
Date Collected: 01.17.20 13.45

Date Received: 01.20.20 09.00
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3114032

Date Prep: 01.21.20 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	77.4	5.04	mg/kg	01.21.20 21.47		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3114322

Date Prep: 01.23.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	01.24.20 03.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.24.20 03.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.24.20 03.01	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.24.20 03.01	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.24.20 03.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-135	01.24.20 03.01	
o-Terphenyl	84-15-1	80	%	70-135	01.24.20 03.01	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH12**
Lab Sample Id: 649590-013

Matrix: Soil
Date Collected: 01.17.20 13.45

Date Received: 01.20.20 09.00
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3114611

Date Prep: 01.26.20 13.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.27.20 18.54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.27.20 18.54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.27.20 18.54	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.27.20 18.54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.27.20 18.54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.27.20 18.54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.27.20 18.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	79	%	70-130	01.27.20 18.54		
1,4-Difluorobenzene	540-36-3	112	%	70-130	01.27.20 18.54		



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH12A**
Lab Sample Id: 649590-014

Matrix: Soil
Date Collected: 01.17.20 14.00

Date Received: 01.20.20 09.00
Sample Depth: 9 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3114032

Date Prep: 01.21.20 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	42.6	5.01	mg/kg	01.21.20 21.54		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3114322

Date Prep: 01.23.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	01.24.20 03.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	01.24.20 03.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	01.24.20 03.20	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	01.24.20 03.20	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	01.24.20 03.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	01.24.20 03.20	
o-Terphenyl	84-15-1	82	%	70-135	01.24.20 03.20	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH12A**
Lab Sample Id: 649590-014

Matrix: Soil
Date Collected: 01.17.20 14.00

Date Received: 01.20.20 09.00
Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3114611

Prep Method: SW5030B

% Moisture:

Date Prep: 01.26.20 13.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.27.20 19.15	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.27.20 19.15	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.27.20 19.15	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.27.20 19.15	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.27.20 19.15	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.27.20 19.15	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.27.20 19.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	01.27.20 19.15		
4-Bromofluorobenzene	460-00-4	84	%	70-130	01.27.20 19.15		



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH12B**
Lab Sample Id: 649590-015

Matrix: Soil
Date Collected: 01.17.20 14.10

Date Received: 01.20.20 09.00
Sample Depth: 18 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3114032

Date Prep: 01.21.20 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	119	4.96	mg/kg	01.21.20 22.15		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3114322

Date Prep: 01.23.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	01.24.20 03.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.24.20 03.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.24.20 03.40	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.24.20 03.40	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.24.20 03.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	74	%	70-135	01.24.20 03.40	
o-Terphenyl	84-15-1	77	%	70-135	01.24.20 03.40	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH12B**
Lab Sample Id: 649590-015

Matrix: Soil
Date Collected: 01.17.20 14.10

Date Received: 01.20.20 09.00
Sample Depth: 18 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3114611

Prep Method: SW5030B

% Moisture:

Date Prep: 01.26.20 13.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.27.20 19.35	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.27.20 19.35	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.27.20 19.35	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.27.20 19.35	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.27.20 19.35	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.27.20 19.35	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.27.20 19.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	116	%	70-130	01.27.20 19.35		
4-Bromofluorobenzene	460-00-4	84	%	70-130	01.27.20 19.35		



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH12C**
Lab Sample Id: 649590-016

Matrix: Soil
Date Collected: 01.17.20 14.20

Date Received: 01.20.20 09.00
Sample Depth: 19 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3114032

Date Prep: 01.21.20 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	153	4.99	mg/kg	01.21.20 22.22		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3114322

Date Prep: 01.23.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	01.24.20 03.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.24.20 03.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.24.20 03.59	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.24.20 03.59	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.24.20 03.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	74	%	70-135	01.24.20 03.59	
o-Terphenyl	84-15-1	75	%	70-135	01.24.20 03.59	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH12C**
Lab Sample Id: 649590-016

Matrix: Soil
Date Collected: 01.17.20 14.20

Date Received: 01.20.20 09.00
Sample Depth: 19 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3114611

Prep Method: SW5030B

% Moisture:

Date Prep: 01.26.20 13.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.27.20 19.55	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.27.20 19.55	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.27.20 19.55	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.27.20 19.55	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.27.20 19.55	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.27.20 19.55	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.27.20 19.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	115	%	70-130	01.27.20 19.55		
4-Bromofluorobenzene	460-00-4	81	%	70-130	01.27.20 19.55		



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH12D**
Lab Sample Id: 649590-017

Matrix: Soil
Date Collected: 01.17.20 14.45

Date Received: 01.20.20 09.00
Sample Depth: 23 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3114032

Date Prep: 01.21.20 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	31.0	5.00	mg/kg	01.21.20 22.29		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3114322

Date Prep: 01.23.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	01.24.20 04.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	01.24.20 04.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.24.20 04.18	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	01.24.20 04.18	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.24.20 04.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	01.24.20 04.18	
o-Terphenyl	84-15-1	80	%	70-135	01.24.20 04.18	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH12D**
Lab Sample Id: 649590-017

Matrix: Soil
Date Collected: 01.17.20 14.45

Date Received: 01.20.20 09.00
Sample Depth: 23 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3114611

Prep Method: SW5030B

% Moisture:

Date Prep: 01.26.20 13.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	01.27.20 20.15	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	01.27.20 20.15	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	01.27.20 20.15	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	01.27.20 20.15	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	01.27.20 20.15	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	01.27.20 20.15	U	1
Total BTEX		<0.00198	0.00198	mg/kg	01.27.20 20.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	01.27.20 20.15		
4-Bromofluorobenzene	460-00-4	75	%	70-130	01.27.20 20.15		



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH12E** Matrix: Soil Date Received: 01.20.20 09.00
 Lab Sample Id: 649590-018 Date Collected: 01.17.20 15.10 Sample Depth: 31 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 01.21.20 17.00 Basis: Wet Weight
 Seq Number: 3114032 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	38.7	5.03	mg/kg	01.21.20 22.36		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 01.23.20 15.00 Basis: Wet Weight
 Seq Number: 3114322 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	01.24.20 04.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.24.20 04.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.24.20 04.37	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.24.20 04.37	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.24.20 04.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	01.24.20 04.37	
o-Terphenyl	84-15-1	90	%	70-135	01.24.20 04.37	



Certificate of Analytical Results 649590

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH12E**
Lab Sample Id: 649590-018

Matrix: Soil
Date Collected: 01.17.20 15.10

Date Received: 01.20.20 09.00
Sample Depth: 31 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3114611

Prep Method: SW5030B

% Moisture:

Date Prep: 01.26.20 13.30

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.27.20 20.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.27.20 20.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.27.20 20.35	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.27.20 20.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.27.20 20.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.27.20 20.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.27.20 20.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	115	%	70-130	01.27.20 20.35		
4-Bromofluorobenzene	460-00-4	79	%	70-130	01.27.20 20.35		



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.

EMSU B 865

Analytical Method: Chloride by EPA 300

Seq Number: 3114029

MB Sample Id: 7694884-1-BLK

Matrix: Solid

LCS Sample Id: 7694884-1-BKS

Prep Method: E300P

Date Prep: 01.21.20

LCSD Sample Id: 7694884-1-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	263	105	262	105	90-110	0	20	mg/kg	01.22.20 02:48	

Analytical Method: Chloride by EPA 300

Seq Number: 3114032

MB Sample Id: 7694885-1-BLK

Matrix: Solid

LCS Sample Id: 7694885-1-BKS

Prep Method: E300P

Date Prep: 01.21.20

LCSD Sample Id: 7694885-1-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	234	94	233	93	90-110	0	20	mg/kg	01.21.20 20:58	

Analytical Method: Chloride by EPA 300

Seq Number: 3114029

Parent Sample Id: 649588-001

Matrix: Soil

MS Sample Id: 649588-001 S

Prep Method: E300P

Date Prep: 01.21.20

MSD Sample Id: 649588-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	172	250	440	107	439	107	90-110	0	20	mg/kg	01.22.20 04:48	

Analytical Method: Chloride by EPA 300

Seq Number: 3114029

Parent Sample Id: 649739-021

Matrix: Soil

MS Sample Id: 649739-021 S

Prep Method: E300P

Date Prep: 01.21.20

MSD Sample Id: 649739-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	196	250	456	104	454	103	90-110	0	20	mg/kg	01.22.20 03:09	

Analytical Method: Chloride by EPA 300

Seq Number: 3114032

Parent Sample Id: 649590-011

Matrix: Soil

MS Sample Id: 649590-011 S

Prep Method: E300P

Date Prep: 01.21.20

MSD Sample Id: 649590-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	40.5	251	276	94	276	94	90-110	0	20	mg/kg	01.21.20 21:19	

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.

EMSU B 865

Analytical Method: Chloride by EPA 300

Seq Number: 3114032

Parent Sample Id: 649593-002

Matrix: Soil

MS Sample Id: 649593-002 S

Prep Method: E300P

Date Prep: 01.21.20

MSD Sample Id: 649593-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	309	249	524	86	525	87	90-110	0	20	mg/kg	01.21.20 22:56	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3114322

MB Sample Id: 7695050-1-BLK

Matrix: Solid

LCS Sample Id: 7695050-1-BKS

Prep Method: SW8015P

Date Prep: 01.23.20

LCSD Sample Id: 7695050-1-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	872	87	853	85	70-135	2	20	mg/kg	01.23.20 21:18	
Diesel Range Organics (DRO)	<15.0	1000	894	89	849	85	70-135	5	20	mg/kg	01.23.20 21:18	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	83		103		103		70-135	%	01.23.20 21:18
o-Terphenyl	86		89		88		70-135	%	01.23.20 21:18

Analytical Method: TPH by SW8015 Mod

Seq Number: 3114322

Matrix: Solid

MB Sample Id: 7695050-1-BLK

Prep Method: SW8015P

Date Prep: 01.23.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	01.23.20 20:59	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3114322

Matrix: Soil

Parent Sample Id: 649588-001

MS Sample Id: 649588-001 S

Prep Method: SW8015P

Date Prep: 01.23.20

MSD Sample Id: 649588-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	850	85	830	83	70-135	2	20	mg/kg	01.23.20 22:15	
Diesel Range Organics (DRO)	<15.0	997	849	85	896	90	70-135	5	20	mg/kg	01.23.20 22:15	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		102		70-135	%	01.23.20 22:15
o-Terphenyl	86		82		70-135	%	01.23.20 22:15

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

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

EMSU B 865

Analytical Method: BTEX by EPA 8021B

Seq Number: 3114611

MB Sample Id: 7695187-1-BLK

Matrix: Solid

LCS Sample Id: 7695187-1-BKS

Prep Method: SW5030B

Date Prep: 01.26.20

LCSD Sample Id: 7695187-1-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	0.110	110	0.116	116	70-130	5	35	mg/kg	01.27.20 11:15	
Toluene	<0.000456	0.100	0.102	102	0.107	107	70-130	5	35	mg/kg	01.27.20 11:15	
Ethylbenzene	<0.000565	0.100	0.0947	95	0.100	100	70-130	5	35	mg/kg	01.27.20 11:15	
m,p-Xylenes	<0.00101	0.200	0.188	94	0.199	100	70-130	6	35	mg/kg	01.27.20 11:15	
o-Xylene	<0.000344	0.100	0.0975	98	0.101	101	70-130	4	35	mg/kg	01.27.20 11:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		105		110		70-130	%	01.27.20 11:15
4-Bromofluorobenzene	80		90		94		70-130	%	01.27.20 11:15

Analytical Method: BTEX by EPA 8021B

Seq Number: 3114611

Parent Sample Id: 649590-001

Matrix: Soil

MS Sample Id: 649590-001 S

Prep Method: SW5030B

Date Prep: 01.26.20

MSD Sample Id: 649590-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0962	25.0	24.1	96	0.0894	89	70-130	199	35	mg/kg	01.27.20 11:55	F
Toluene	<0.114	25.0	22.3	89	0.0795	79	70-130	199	35	mg/kg	01.27.20 11:55	F
Ethylbenzene	<0.141	25.0	21.8	87	0.0776	78	70-130	199	35	mg/kg	01.27.20 11:55	F
m,p-Xylenes	<0.254	50.0	43.3	87	0.154	77	70-130	199	35	mg/kg	01.27.20 11:55	F
o-Xylene	<0.0861	25.0	22.1	88	0.0786	78	70-130	199	35	mg/kg	01.27.20 11:55	F

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		112		70-130	%	01.27.20 11:55
4-Bromofluorobenzene	96		95		70-130	%	01.27.20 11:55

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



Chain of Custody

Work Order No:

649590

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

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

www.xenco.com

Page 1 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	bbell@xenco.com

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

Project Name:	EMSU 8 865 (RP-5562)	Turn Around	☒
Project Number:	012919105	Routine	☒
P.O. Number:		Rush:	
Sampler's Name:	Benjamin Beill	Due Date:	

Temperature (°C):	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Received Intact:	Yes	No	Thermometer ID	T-MM-007		
Cooler Custody Seals:	Yes	No	Correction Factor:	-0.2		
Sample Custody Seals:	Yes	No	Total Containers:	18		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EP	BTEX (E	Chloride																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																</
-----------------------	--------	--------------	--------------	-------	--------	---------	---------	----------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	----

Total 200.7 / 6010 200.8 / 6020:

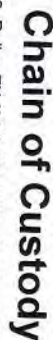
Circle Method(s) and Metal(s) to be analyzed

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb 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>	1/20/20 5:00 am	<i>[Signature]</i>	<i>[Signature]</i>	1/20/20 9:00



1949590

Page 6 of 6

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

ANALYSIS REQUEST										Work Order Notes
of Containers										
A 8015)										
PA 0=8021)										
(EPA 300.0)										
TAT starts the day received by the										

Circle Method(s) and Metal(s) to be analyzed

TC1P / SPLP 6010:	8RCRA	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO2	Na	Sr	Ti	Sn	U	V	Zn
-------------------	-------	----	----	----	----	---	----	----	----	----	----	----	----	----	----	----	---	----	----	------	----	----	----	----	---	---	----

1631 / 245.1 / 7470 / 7471 : Hg

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.

Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
				
	11/20/2018:00am			1/20/2019:50



Inter-Office Shipment

Page 1 of 3

IOS Number **56406**

Date/Time: 01/20/20 12:35

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.: 777559366372

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
649590-001	S	BH10	01/17/20 10:15	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	
649590-001	S	BH10	01/17/20 10:15	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	
649590-001	S	BH10	01/17/20 10:15	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	
649590-002	S	BH10A	01/17/20 10:20	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	
649590-002	S	BH10A	01/17/20 10:20	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	
649590-002	S	BH10A	01/17/20 10:20	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	
649590-003	S	BH10B	01/17/20 10:25	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	
649590-003	S	BH10B	01/17/20 10:25	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	
649590-003	S	BH10B	01/17/20 10:25	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	
649590-004	S	BH10C	01/17/20 10:30	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	
649590-004	S	BH10C	01/17/20 10:30	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	
649590-004	S	BH10C	01/17/20 10:30	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	
649590-005	S	BH10D	01/17/20 10:40	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	
649590-005	S	BH10D	01/17/20 10:40	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	
649590-005	S	BH10D	01/17/20 10:40	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	
649590-006	S	BH10E	01/17/20 11:00	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	
649590-006	S	BH10E	01/17/20 11:00	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	
649590-006	S	BH10E	01/17/20 11:00	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	
649590-007	S	BH11	01/17/20 11:30	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	
649590-007	S	BH11	01/17/20 11:30	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	
649590-007	S	BH11	01/17/20 11:30	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	
649590-008	S	BH11A	01/17/20 11:40	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	
649590-008	S	BH11A	01/17/20 11:40	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	
649590-008	S	BH11A	01/17/20 11:40	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	
649590-009	S	BH11B	01/17/20 11:50	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	



Inter-Office Shipment

Page 2 of 3

IOS Number **56406**

Date/Time: 01/20/20 12:35

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.: 777559366372

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
649590-009	S	BH11B	01/17/20 11:50	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	
649590-009	S	BH11B	01/17/20 11:50	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	
649590-010	S	BH11C	01/17/20 12:00	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	
649590-010	S	BH11C	01/17/20 12:00	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	
649590-010	S	BH11C	01/17/20 12:00	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	
649590-011	S	BH11D	01/17/20 12:10	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	
649590-011	S	BH11D	01/17/20 12:10	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	
649590-011	S	BH11D	01/17/20 12:10	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	
649590-012	S	BH11E	01/17/20 12:20	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	
649590-012	S	BH11E	01/17/20 12:20	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	
649590-012	S	BH11E	01/17/20 12:20	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	
649590-013	S	BH12	01/17/20 13:45	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	
649590-013	S	BH12	01/17/20 13:45	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	
649590-013	S	BH12	01/17/20 13:45	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	
649590-014	S	BH12A	01/17/20 14:00	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	
649590-014	S	BH12A	01/17/20 14:00	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	
649590-014	S	BH12A	01/17/20 14:00	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	
649590-015	S	BH12B	01/17/20 14:10	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	
649590-015	S	BH12B	01/17/20 14:10	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	
649590-015	S	BH12B	01/17/20 14:10	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	
649590-016	S	BH12C	01/17/20 14:20	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	
649590-016	S	BH12C	01/17/20 14:20	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	
649590-016	S	BH12C	01/17/20 14:20	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	
649590-017	S	BH12D	01/17/20 14:45	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	
649590-017	S	BH12D	01/17/20 14:45	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	

Inter Office Shipment or Sample Comments:



Inter-Office Shipment

Page 3 of 3

IOS Number **56406**

Date/Time: 01/20/20 12:35

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.: 777559366372

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
649590-017	S	BH12D	01/17/20 14:45	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	
649590-018	S	BH12E	01/17/20 15:10	E300_CL	Chloride by EPA 300	01/24/20	02/14/20	JKR	CL	
649590-018	S	BH12E	01/17/20 15:10	SW8015MOD_NM	TPH by SW8015 Mod	01/24/20	01/31/20	JKR	GRO-DRO PHCC10C28 PF	
649590-018	S	BH12E	01/17/20 15:10	SW8021B	BTEX by EPA 8021B	01/24/20	01/31/20	JKR	BZ BZME EBZ XYLENES	

Inter Office Shipment or Sample Comments:

Relinquished By:

Date Relinquished:

Elizabeth McClellan

01/20/2020

Received By:

Brianna Teel

Date Received:

01/21/2020 11:03

Cooler Temperature:

0.6



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 56406

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 01/20/2020 12:35 PM

Received By: Brianna Teel

Date Received: 01/21/2020 11:03 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: 01/21/2020

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01.20.2020 09.00.00 AM

Work Order #: 649590

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?	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: 01.20.2020

Checklist reviewed by:



Jessica Kramer

Date: 01.21.2020

Analytical Report 649593

for
LT Environmental, Inc.

Project Manager: Dan Moir

EMSU B 865

012919105

22-JAN-20

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

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

Xenco-Dallas (EPA Lab Code: TX01468):

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

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

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

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

Xenco-Carlsbad (LELAP): Louisiana (05092)

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

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

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



22-JAN-20

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **649593**

EMSU B 865

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) 649593. 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. 649593 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 649593****LT Environmental, Inc., Arvada, CO**

EMSU B 865

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH09	S	01-16-20 12:20	1 ft	649593-001
BH09A	S	01-16-20 12:50	19 ft	649593-002
BH09B	S	01-16-20 13:30	28 ft	649593-003
BH09C	S	01-16-20 14:30	34 ft	649593-004
BH09D	S	01-16-20 15:30	50 ft	649593-005



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: EMSU B 865

Project ID: 012919105
Work Order Number(s): 649593

Report Date: 22-JAN-20
Date Received: 01/20/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3114032 Chloride by EPA 300

Lab Sample ID 649593-002 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: 649593-001, -002, -003, -004, -005.

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



Certificate of Analysis Summary 649593

LT Environmental, Inc., Arvada, CO

Project Name: EMSU B 865

Project Id: 012919105

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Jan-20-20 09:00 am

Report Date: 22-JAN-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	649593-001	649593-002	649593-003	649593-004	649593-005	
	<i>Field Id:</i>	BH09	BH09A	BH09B	BH09C	BH09D	
	<i>Depth:</i>	1- ft	19- ft	28- ft	34- ft	50- ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Jan-16-20 12:20	Jan-16-20 12:50	Jan-16-20 13:30	Jan-16-20 14:30	Jan-16-20 15:30	
Chloride by EPA 300 SUB: T104704400-19-19	<i>Extracted:</i>	Jan-21-20 17:00	Jan-21-20 17:00	Jan-21-20 17:00	Jan-21-20 17:00	Jan-21-20 17:00	
	<i>Analyzed:</i>	Jan-21-20 22:43	Jan-21-20 22:49	Jan-21-20 23:10	Jan-21-20 23:17	Jan-21-20 23:38	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		<4.96 4.96	309 4.98	21.4 5.00	24.7 4.97	<4.95 4.95	

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 649593

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH09**
Lab Sample Id: 649593-001

Matrix: Soil
Date Collected: 01.16.20 12.20

Date Received: 01.20.20 09.00
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3114032

Date Prep: 01.21.20 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	01.21.20 22.43	U	1



Certificate of Analytical Results 649593

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH09A**
Lab Sample Id: 649593-002

Matrix: Soil
Date Collected: 01.16.20 12.50

Date Received: 01.20.20 09.00
Sample Depth: 19 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3114032

Date Prep: 01.21.20 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	309	4.98	mg/kg	01.21.20 22.49		1



Certificate of Analytical Results 649593

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH09B**
Lab Sample Id: 649593-003

Matrix: Soil
Date Collected: 01.16.20 13.30

Date Received: 01.20.20 09.00
Sample Depth: 28 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3114032

Date Prep: 01.21.20 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	21.4	5.00	mg/kg	01.21.20 23.10		1

**Certificate of Analytical Results 649593****LT Environmental, Inc., Arvada, CO**

EMSU B 865

Sample Id: **BH09C**
Lab Sample Id: 649593-004

Matrix: Soil
Date Collected: 01.16.20 14.30

Date Received: 01.20.20 09.00
Sample Depth: 34 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3114032

Date Prep: 01.21.20 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.7	4.97	mg/kg	01.21.20 23.17		1



Certificate of Analytical Results 649593

LT Environmental, Inc., Arvada, CO

EMSU B 865

Sample Id: **BH09D**
Lab Sample Id: 649593-005

Matrix: Soil
Date Collected: 01.16.20 15.30

Date Received: 01.20.20 09.00
Sample Depth: 50 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3114032

Date Prep: 01.21.20 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	01.21.20 23.38	U	1



Flagging Criteria

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

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

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

EMSU B 865

Analytical Method: Chloride by EPA 300

Seq Number: 3114032

MB Sample Id: 7694885-1-BLK

Matrix: Solid

LCS Sample Id: 7694885-1-BKS

Prep Method: E300P

Date Prep: 01.21.20

LCSD Sample Id: 7694885-1-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	234	94	233	93	90-110	0	20	mg/kg	01.21.20 20:58	

Analytical Method: Chloride by EPA 300

Seq Number: 3114032

Parent Sample Id: 649590-011

Matrix: Soil

MS Sample Id: 649590-011 S

Prep Method: E300P

Date Prep: 01.21.20

MSD Sample Id: 649590-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	40.5	251	276	94	276	94	90-110	0	20	mg/kg	01.21.20 21:19	

Analytical Method: Chloride by EPA 300

Seq Number: 3114032

Parent Sample Id: 649593-002

Matrix: Soil

MS Sample Id: 649593-002 S

Prep Method: E300P

Date Prep: 01.21.20

MSD Sample Id: 649593-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	309	249	524	86	525	87	90-110	0	20	mg/kg	01.21.20 22:56	X

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

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

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

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



Chain of Custody

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

Work Order No: 649593

www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432-236-3849	Email:	bbelill@ltenv.com

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

SAMPLE RECEIPT				Turn Around		ANALYSIS REQUEST														Work Order Notes		
Temperature (°C):	Temp Blank:	Yes	No	Wet Ice:	Yes	No	Thermometer ID															TAT starts the day received by the lab, if received by 4:30pm
Received Intact:	Yes	No	Yes	No	Correction Factor:															Sample Comments		
Cooler Custody Seals:	Yes	No	Yes	No	Total Containers:																	
Sample Custody Seals:	Yes	No	Yes	No																		
Sample Identification		Matrix	Date Sampled	Time Sampled	Depth	Number of Containers														Sample Comments		
SH04		S	1/16/10	12:20	1'																	
SH04A				12:50	14'																	
SH04B				13:30	28'																	
SH04C				14:30	34'																	
SH04D				15:30	50'																	
						Chloride (EPA 300.0)														Sample Comments		
						BTX (EPA 8015)														Sample Comments		

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$6 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>[Signature]</i>	<i>[Signature]</i>	1/20/20 4:00 AM	<i>[Signature]</i>	<i>[Signature]</i>	1/20/20 9:00
3 <i>[Signature]</i>					



Inter-Office Shipment

Page 1 of 1

IOS Number **56409**

Date/Time: 01/20/20 12:39

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.: 777559366372

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
649593-001	S	BH09	01/16/20 12:20	E300_CL	Chloride by EPA 300	01/24/20	02/13/20	JKR	CL	
649593-002	S	BH09A	01/16/20 12:50	E300_CL	Chloride by EPA 300	01/24/20	02/13/20	JKR	CL	
649593-003	S	BH09B	01/16/20 13:30	E300_CL	Chloride by EPA 300	01/24/20	02/13/20	JKR	CL	
649593-004	S	BH09C	01/16/20 14:30	E300_CL	Chloride by EPA 300	01/24/20	02/13/20	JKR	CL	
649593-005	S	BH09D	01/16/20 15:30	E300_CL	Chloride by EPA 300	01/24/20	02/13/20	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By:

Elizabeth McClellan

Date Relinquished: 01/20/2020

Received By:

Brianna Teel

Date Received: 01/21/2020 11:03

Cooler Temperature: 0.6



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 56409

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 01/20/2020 12:39 PM

Received By: Brianna Teel

Date Received: 01/21/2020 11:03 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: 01/21/2020

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01.20.2020 09.00.00 AM

Work Order #: 649593

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?	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: 01.20.2020

Checklist reviewed by:



Jessica Kramer

Date: 01.21.2020

Analytical Report 651636

for
LT Environmental, Inc.

Project Manager: Dan Moir

EMSU B865

012919105

07-FEB-20

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

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

Xenco-Dallas (EPA Lab Code: TX01468):

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

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

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

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

Xenco-Carlsbad (LELAP): Louisiana (05092)

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

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

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



07-FEB-20

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **651636**

EMSU B865

Project Address: Lea

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) 651636. 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. 651636 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 651636

LT Environmental, Inc., Arvada, CO

EMSU B865

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH07G	S	02-06-20 10:40	35 ft	651636-001



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: EMSU B865

Project ID: 012919105
Work Order Number(s): 651636

Report Date: 07-FEB-20
Date Received: 02/06/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3115847 BTEX by EPA 8021B

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



Certificate of Analysis Summary 651636

LT Environmental, Inc., Arvada, CO

Project Name: EMSU B865

Project Id: 012919105

Contact: Dan Moir

Project Location: Lea

Date Received in Lab: Thu Feb-06-20 04:25 pm

Report Date: 07-FEB-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	651636-001					
	Field Id:	BH07G					
	Depth:	35- ft					
	Matrix:	SOIL					
	Sampled:	Feb-06-20 10:40					
BTEX by EPA 8021B	Extracted:	Feb-06-20 17:00					
	Analyzed:	Feb-07-20 03:22					
	Units/RL:	mg/kg RL					
Benzene		<0.00199 0.00199					
Toluene		<0.00199 0.00199					
Ethylbenzene		<0.00199 0.00199					
m,p-Xylenes		<0.00398 0.00398					
o-Xylene		<0.00199 0.00199					
Total Xylenes		<0.00199 0.00199					
Total BTEX		<0.00199 0.00199					
Chloride by EPA 300	Extracted:	Feb-06-20 17:25					
	Analyzed:	Feb-06-20 19:38					
	Units/RL:	mg/kg RL					
Chloride		394 9.96					
TPH by SW8015 Mod	Extracted:	Feb-06-20 17:30					
	Analyzed:	Feb-06-20 22:10					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2					
Diesel Range Organics (DRO)		<50.2 50.2					
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2					
Total GRO-DRO		<50.2 50.2					
Total TPH		<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 651636

LT Environmental, Inc., Arvada, CO

EMSU B865

Sample Id: **BH07G**
Lab Sample Id: 651636-001

Matrix: Soil
Date Collected: 02.06.20 10.40

Date Received: 02.06.20 16.25
Sample Depth: 35 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3115855

Date Prep: 02.06.20 17.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	394	9.96	mg/kg	02.06.20 19.38		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3115871

Date Prep: 02.06.20 17.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	02.06.20 22.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	02.06.20 22.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	02.06.20 22.10	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	02.06.20 22.10	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	02.06.20 22.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	02.06.20 22.10	
o-Terphenyl	84-15-1	102	%	70-135	02.06.20 22.10	



Certificate of Analytical Results 651636

LT Environmental, Inc., Arvada, CO

EMSU B865

Sample Id: **BH07G**
Lab Sample Id: 651636-001

Matrix: Soil
Date Collected: 02.06.20 10.40

Date Received: 02.06.20 16.25
Sample Depth: 35 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3115847

Date Prep: 02.06.20 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.07.20 03.22	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.07.20 03.22	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.07.20 03.22	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.07.20 03.22	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.07.20 03.22	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.07.20 03.22	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.07.20 03.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.07.20 03.22		
1,4-Difluorobenzene	540-36-3	103	%	70-130	02.07.20 03.22		



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.

EMSU B865

Analytical Method: Chloride by EPA 300

Seq Number: 3115855

MB Sample Id: 7696182-1-BLK

Matrix: Solid

LCS Sample Id: 7696182-1-BKS

Prep Method: E300P

Date Prep: 02.06.20

LCSD Sample Id: 7696182-1-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	252	101	253	101	90-110	0	20	mg/kg	02.06.20 19:26	

Analytical Method: Chloride by EPA 300

Seq Number: 3115855

Parent Sample Id: 651629-003

Matrix: Soil

MS Sample Id: 651629-003 S

Prep Method: E300P

Date Prep: 02.06.20

MSD Sample Id: 651629-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	12400	2000	14200	90	14200	90	90-110	0	20	mg/kg	02.06.20 21:05	

Analytical Method: Chloride by EPA 300

Seq Number: 3115855

Parent Sample Id: 651636-001

Matrix: Soil

MS Sample Id: 651636-001 S

Prep Method: E300P

Date Prep: 02.06.20

MSD Sample Id: 651636-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	394	200	604	105	604	105	90-110	0	20	mg/kg	02.06.20 19:43	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3115871

MB Sample Id: 7696210-1-BLK

Matrix: Solid

LCS Sample Id: 7696210-1-BKS

Prep Method: SW8015P

Date Prep: 02.06.20

LCSD Sample Id: 7696210-1-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	1140	114	70-135	7	35	mg/kg	02.06.20 20:51	
Diesel Range Organics (DRO)	<50.0	1000	968	97	985	99	70-135	2	35	mg/kg	02.06.20 20:51	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		116		125		70-135	%	02.06.20 20:51
o-Terphenyl	106		104		110		70-135	%	02.06.20 20:51

Analytical Method: TPH by SW8015 Mod

Seq Number: 3115871

Matrix: Solid

MB Sample Id: 7696210-1-BLK

Prep Method: SW8015P

Date Prep: 02.06.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.07.20 09:46	

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



LT Environmental, Inc.

EMSU B865

Analytical Method: TPH by SW8015 Mod

Seq Number: 3115871

Parent Sample Id: 651630-001

Matrix: Soil

MS Sample Id: 651630-001 S

Prep Method: SW8015P

Date Prep: 02.06.20

MSD Sample Id: 651630-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.3	1010	1130	112	1130	113	70-135	0	35	mg/kg	02.06.20 21:11	
Diesel Range Organics (DRO)	65.4	1010	1210	113	1050	99	70-135	14	35	mg/kg	02.06.20 21:11	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		122		70-135	%	02.06.20 21:11
o-Terphenyl	116		123		70-135	%	02.06.20 21:11

Analytical Method: BTEX by EPA 8021B

Seq Number: 3115847

MB Sample Id: 7696180-1-BLK

Matrix: Solid

LCS Sample Id: 7696180-1-BKS

Prep Method: SW5030B

Date Prep: 02.06.20

LCSD Sample Id: 7696180-1-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	0.108	108	0.110	110	70-130	2	35	mg/kg	02.06.20 22:36	
Toluene	<0.00200	0.100	0.104	104	0.105	105	70-130	1	35	mg/kg	02.06.20 22:36	
Ethylbenzene	<0.00200	0.100	0.0996	100	0.101	101	71-129	1	35	mg/kg	02.06.20 22:36	
m,p-Xylenes	<0.00400	0.200	0.204	102	0.209	105	70-135	2	35	mg/kg	02.06.20 22:36	
o-Xylene	<0.00200	0.100	0.103	103	0.105	105	71-133	2	35	mg/kg	02.06.20 22:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		104		105		70-130	%	02.06.20 22:36
4-Bromofluorobenzene	96		96		98		70-130	%	02.06.20 22:36

Analytical Method: BTEX by EPA 8021B

Seq Number: 3115847

Parent Sample Id: 651629-001

Matrix: Soil

MS Sample Id: 651629-001 S

Prep Method: SW5030B

Date Prep: 02.06.20

MSD Sample Id: 651629-001 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	0.111	111	0.104	105	70-130	7	35	mg/kg	02.06.20 23:17	
Toluene	<0.00200	0.0998	0.104	104	0.0985	99	70-130	5	35	mg/kg	02.06.20 23:17	
Ethylbenzene	<0.00200	0.0998	0.0982	98	0.0932	94	71-129	5	35	mg/kg	02.06.20 23:17	
m,p-Xylenes	<0.00399	0.200	0.200	100	0.191	96	70-135	5	35	mg/kg	02.06.20 23:17	
o-Xylene	<0.00200	0.0998	0.101	101	0.0961	97	71-133	5	35	mg/kg	02.06.20 23:17	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		104		70-130	%	02.06.20 23:17
4-Bromofluorobenzene	102		96		70-130	%	02.06.20 23:17

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

Work Order No.:

1451434

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

www.xenco.com

Page 1 of 1

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

www.xenico.com Page 1 of 1

Work Order Comments			
Program: UST/PST	☐ RP	☐ Growfields	☒ RC \$perfund
State of Project:			
Reporting Level II	☐ Level III	☐ ST/UST	☐ RP ☒ Level IV
Deliverables: EDD	☐	ADAPT	☐ Other:

ANALYSIS REQUEST						Work Order Notes
Project Name:	EMSU B 865			Turn Around		
Project Number:	012919105			Routine	☐	
P.O. Number:	Lea			Rush:	2-day	
Sampler's Name:	William Mather			Due Date:	cc 2/6/97	
SAMPLE RECEIPT				Temp Blank	Yes ☒ No ☐	Wet Ice: Yes ☒ No ☐
Temperature (°C):	0.2			Thermometer ID TNM007		
Received In tact:	Yes ☒ No ☐					
Cooler Custody Seals:	Yes ☒ No ☐ N/A			Correction Factor:	-0.2	
Sample Custody Seals:	Yes ☒ No ☐ N/A			Total Containers:	1	
Number of Containers						
(A 8015)						
(PA 0=8021)						
(EPA 300.0)						
TAT starts the day received by the lab, if received by 4:30pm						

[illegible]

Total	200.7 / 6010	200.8 / 6020:
-------	--------------	---------------

8RCRA	13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Ea	Pb	Mn	Mg	Ni	K	Se	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 Ni Se Ag Ti H

1631 / 245.1 / 7470 / 7471 : Hg

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
		26/10/25			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 02.06.2020 04.25.00 PM

Work Order #: 651636

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Elizabeth McClellan

Date: 02.06.2020

Checklist reviewed by:



Jessica Kramer

Date: 02.07.2020

ATTACHMENT 3: LITHOLOGIC / SOIL SAMPLING LOG





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

Compliance · Engineering · Remediation

Identifier:

BH01

Date:

06/25/2019

Project Name:

EMSUB 865

RP Number:

IRP-5562

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: GG

Method: HA

Lat/Long:

Field Screening:

CT5/PID

Hole Diameter:

Total Depth:

8'

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
						0			
1135	D	364	1.8	N		1			Sand, brown, med Plasticity
1140	D	416	1.8	N		2			Sandy loam, brown med Plasticity
1145	D	530	2.3	N		3			Sandy loam, brown, med Plasticity
1150	D	722	1.9	N	BH01	4			Sandy loam, brown, med Plasticity
1325	D	785	1.6	N		5			Sandy loam, brown, med Plasticity
1330	D	655	1.2	N		6			Sandy loam, brown, med Plasticity
1335	D	1003	1.4	N		7			Sandy loam, brown, med Plasticity
1340	D	1003	0.4	N	BH01A	8			Sandy loam, brown, med Plasticity
						9			
						10			
						11			
						12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH02		Date: 06/25/2019		
				Project Name: EMSOB 865		RP Number: IRP-5562		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: GG		Method: HA		
Lat/Long:		Field Screening: CTS/PID		Hole Diameter:		Total Depth: 7		
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1210	D	364	4.0	N	1			sandy loam, brown med plasticity
1215	D	655	655 2.0	N	2			sandy loam, light brown med plasticity
1220	D	785	3.0	N	3			sandy loam, light brown med plasticity
1225	D	785	2.6	N	4			sandy loam, tan-grey, med plasticity
1500	D	1072		N	5			sandy loam, tan-grey, med plasticity
1505	D	1081		N	6			sandy loam, tan-grey, med plasticity
1510	D	1081		N	7			sandy loam, tan-grey, med plasticity
					8			Auger refusal
					9			
					10			
					11			
					12			

1300
1305
1310
1315



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

Compliance · Engineering · Remediation

Identifier:

BH04

Date:

06/25/2019

Project Name:

EMSU-B 865

RP Number:

IRP-5562

LITHOLOGIC / SOIL SAMPLING LOG

Logged By:

GG

Method:

HA

Lat/Long:

Field Screening:

CTS/PID

Hole Diameter:

Total Depth:

6

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1240	D	530	1.7	N	1			sandy loam, brown, med plasticity
1245	D	1164	1.7	N	2			sandy loam, light brown-tan low plasticity
1250	D	1081	1.4	N	3			sandy loam, tan, low plasticity
1255	D	655	1.1	N	4			sandy loam, tan, low plasticity
1530	D	4180		BH04A	5			sandy loam, tan, low plasticity
1535	D	4180			6			
					7			
					8			
					9			
					10			
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH05		Date: 06/26/19		
				Project Name: EMSU-B 865		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			
1130	483	13.4		BH05	1			brown, sandy loam, low plasticity
1135	<180	16.8			2			light brown, sandy loam, med plasticity
1140	<180	14.4			3			light brown-tan, sandy loam, med plasticity
1145	<180	10.3		BH05A	4			tan-grey, sandy loam, low Low plasticity
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH06		Date:		
				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			
1150	4180	17.3		BH06	1			brown, sandy loam, low plasticity
1155	4180	14.3			2			light brown-tan, sandy loam low plasticity
1200	739	7.3		BH06A	3			grey, sandy loam-some caliche med plasticity
1205					4			Auger refusal
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation					Identifier: BH07		Date: 1/15/2020	
					Project Name: EMSU B 865		RP Number: 1RP-5562	
LITHOLOGIC / SOIL SAMPLING LOG					Logged By: BB, WM		Method: Sonic Drill	
Lat/Long:			Field Screening: Chloride, PID		Hole Diameter: 4"		Total Depth: 35'	
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	196	11.5	N		0	1'	CH	sandy fat CLAY, moist, drak brown - brown, high plasticity, cohesive, some fine grained sand, strong H/C odor, no stain
M	<120	0.5	N	BH07	6	5'	CCHE	CALICHE w/ sand, moist, light brown-tan, moderately consolidated, some medium grained sand, no stain, trace H/C odor
M	248	2	N	BH07A	12	10'		
M	556	0.7	N	BH07B	18	18'		
M	556	0.8	N	BH07C		19'		
M	556	1.0	N	BH07D	24	22'	SW	SAND w/ caliche gravel, moist, light brown, well graded, medium-fine grain, some sub-angular gravel, no stain, no odor
M	664	1.9	N	BH07E	30	29'		
M	348	1.1	N	BH07F		31'		
M	285	0.5	N	BH07G	36	35'		Total Depth 35 feet bgs

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation					Identifier: BH08		Date: 1/15/2020	
					EMSU B 865		1RP-5562	
LITHOLOGIC / SOIL SAMPLING LOG					Logged By: BB, WM		Method: Sonic Drill	
Lat/Long:			Field Screening: Chloride, PID		Hole Diameter: 4"		Total Depth: 31'	
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	120	0.9	N	BH08	0	1'	SP	SAND, moist, brown, poorly graded, fine-medium grained, no stain no odor, trace roots
M	696	1.1	N	BH08A	6	7'	CCHE	CALICHE, moist, tan-off white, moderately consolidated, some light brown sand laminations, no stain, no odor
D	720	4.7	N	BH08B	12	12'		
M	720	2.5	N	BH08C	18	18'		
M	1,116	2.4	N	BH08D		19'		
M	528	6.0	N	BH08E	24	23' 24'	SP	SAND, moist, brown-light brown, poorly graded, fine grain, trace caliche, no stain, no odor
M	248	2.6	N	BH08F		26'		
M	508	2.3	N	BH08G	30	31'		Total Depth 31 feet bgs
					36			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation					Identifier: BH09		Date: 1/16/2020	
					Project Name: EMSU B 865		RP Number: 1RP-5562	
LITHOLOGIC / SOIL SAMPLING LOG					Logged By: BB, WM		Method: Sonic Drill	
Lat/Long:			Field Screening: Chloride, PID		Hole Diameter: 4"		Total Depth: 50'	
Comments: DTW was developed in borehole 24 hrs after borehole was completed, DTW=41.6' bgs								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	<120	0	N	BH09	0	1'	SW	SAND, moist, light brown-tan, well graded, medium grain, some cobble, no stain, no odor
						4'	SP	SAND, dry, tan, poorly graded, fine grained, no stain, no odor
					8	6'	CCHE	CALICHE, dry, tan-off white, well consolidated, some dark brown limestone inclusions, no stain, no odor
					16			
D	204	0.1	N	BH09A	24	19'	SP	SAND, moist, light brown, poorly graded, fine grained, trace caliche gravel, no stain, no odor
D	<120	0.6	N	BH09B	32	27' 28'	CCHE	CALICHE, dry, tan-light brown, moderately consolidated, trace fine grained light brown sand, no stain, no odor
D	<120	0.7	N	BH09C		33' 34'	SP-S	SANDSTONE, dry, light brown, poorly consolidated, calcareous cemented, medium grain, poorly graded, some caliche gravel, no stain, no odor
					40	36'	SP	SAND w/ limestone gravel, dry, light brown, poorly graded, sub-round gravel, no stain, no odor
					48	43'	CH	CLAY, moist, red-dark brown, high plasticity, cohesive, few medium grain sand, no stain, no odor
M	<120	0.4	N	BH09D		50'		Total Depth 50 feet bgs
					56			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation					Identifier: BH10		Date: 1/16/2020	
					EMSU B 865		1RP-5562	
LITHOLOGIC / SOIL SAMPLING LOG					Logged By: BB, WM		Method: Sonic Drill	
Lat/Long:			Field Screening: Chloride, PID		Hole Diameter: 4"		Total Depth: 31'	
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	<120	1.0	N	BH10	0	1'	SW	SAND, moist, brown-light brown, well graded, fine-medium grain, no stain, no odor
					6	4'	SP	SAND, moist, light brown-gray, poorly graded, fine grain, no stain no odor
D	148	0.2	N	BH10A	12	9'	CCHE	CALICHE, dry, off white-tan, moderately consolidated, no stain, no odor
M	304	0.6	N	BH10B	18	17'		
M		1.0	N	BH10C		19'		
M	268	0.6	N	BH10D	24	22'	SP	SAND, moist, brown-light brown, poorly graded, fine-medium grain, some sub-rounded caliche gravel and cobble, no stain, no odor
					30	28'	CCHE	CALICHE, dry, tan-off white, well consolidated, no stain, no odor
						30'	SP	SAND, moist, brown-light brown, fine-medium grain, poorly graded, no stain, no odor
M	<120	1.2	N	BH10E		31'		Total Depth 31 feet bgs
					36'			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation					Identifier: BH11		Date: 1/17/2020	
					EMSU B 865		1RP-5562	
LITHOLOGIC / SOIL SAMPLING LOG					Logged By: BB, WM		Method: Sonic Drill	
Lat/Long:			Field Screening: Chloride, PID		Hole Diameter: 4"		Total Depth: 31'	
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	<120	0.5	N	BH11	0	1'	SW	SAND, moist, brown-light brown, well graded, fine-medium grain, no stain, no odor
						3'	SP	SAND, moist, light gray-light brown, poorly graded, medium grain no stain, no odor
					6			
						8'	CCHE	CALICHE, moist, off white-tan, moderately consolidated, some medium grain sand, no stain, no odor
M	<120	0.2	N	BH11A	12	10'		
M	<120	1.2	N	BH11B	18	18'		
M	<120	1.4	N	BH11C		19'		
M	<120	1.0	N	BH11D	24	23'	SP	SAND w/ caliche gravel, moist, light brown-brown, poorly graded, fine-medium grain, no stain, no odor
					30			
M	<120	0.3	N	BH11E		31'		Total Depth 31 feet bgs
					36			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation					Identifier: BH12		Date: 1/17/2020	
					EMSU B 865		1RP-5562	
LITHOLOGIC / SOIL SAMPLING LOG					Logged By: BB, WM		Method: Sonic Drill	
Lat/Long:			Field Screening: Chloride, PID		Hole Diameter: 4"		Total Depth: 31'	
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	<120	0.2	N	BH12	0	1'	SP	SAND, moist, light brown-gray, poorly graded, fine grain, no stain no odor
D	172	2.2	N	BH12A	6	8' 9'	CCHE	CALICHE, dry, off white-tan, moderately consolidated, some light brown fine grain sand, no stain, no odor
M	236	0.5	N	BH12B	18	18'		
M	236	0.6	N	BH12C		19'		
						20'	SP	SAND, moist, light brown-brown, poorly graded, medium-fine grain, some sub-angular caliche gravel, no stain, no odor
M	<120		N	BH12D	24	23'		
						28'	CCHE	CALICHE, moist, tan-off white, moderately consolidated, few fine grain light brown sand, no odor, no stain
					30	30'	SP	SAND w/ some caliche gravel, moist, light brown, poorly graded, fine grain, some off white sub angular gravel, no odor, no stain
M	<120	2.1	N	BH11E		31'		Total Depth 31 feet bgs
					36			