

June 7, 2019

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

**RE: Deferral Request
Ross Draw 3031 Battery
Remediation Permit Number 2RP-5330
Eddy County, New Mexico**

Dear Mr. Bratcher

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following report detailing soil sampling activities at the Ross Draw 3031 Battery (Site) in Unit H, Section 31, Township 26 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling activities was to address impacts to soil after a crude oil release at the Site.

On March 10, 2019, loose nuts on one of the flanges on the suction side of the new lease automatic custody transfer (LACT) unit resulted in the release of 14 barrels (bbls) of crude oil. A vacuum truck was dispatched to the Site to recover the free-standing fluid; approximately 13 bbls of crude oil were recovered. The flange was properly tightened, and the facility was returned to production. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on March 22, 2019, and was assigned Remediation Permit (RP) Number 2RP-5330 (Attachment 1). Based on the results of the soil sampling events, XTO is requesting deferral of final remediation.

BACKGROUND

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 less than 50 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is Texas Water Development Board (TWDB) well 4601202 located approximately 5,272 feet southwest of the Site. The water well has a depth to groundwater of 44 feet and a total depth of 80 feet. Ground surface elevation at the water well location is 2,858 feet, which is 50 feet lower in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is Tucker Draw, a first order tributary to Red Bluff Reservoir located approximately 1,045 feet west 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 high potential karst area. Based on these criteria, the following NMOCD Table 1 closure criteria were applied: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 100 mg/kg total petroleum hydrocarbons (TPH); and 600 mg/kg chloride.

PRELIMINARY SOIL SAMPLING

On March 20, 2019, LTE personnel inspected the Site to evaluate the release extent. Surface hydrocarbon staining was observed in the release area. The release extent was mapped using a handheld Global Positioning System (GPS) unit and is depicted on Figure 2. LTE personnel collected four preliminary soil samples (SS01 through SS04) within the release area from a depth of 0.5 feet bgs to assess the lateral extent of soil impacts. The soil samples were screened for volatile aromatic hydrocarbons and chlorides using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. The soil samples were placed directly into pre-cleaned glass jars, labeled with location, date, time, sampler, and method of analysis, and immediately placed on ice. The samples were shipped to Xenco Laboratories (Xenco) in Midland, Texas, at 4 degrees Celsius (°C) under strict chain-of-custody 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. The soil sample locations are presented on Figure 2.

Laboratory analytical results indicated that BTEX and TPH concentrations exceeded the NMOCD Table 1 closure criteria in preliminary soil samples SS01 through SS04. Based on the laboratory analytical results, potholing was scheduled to delineate the lateral and vertical extent of impacted soil. Laboratory analytical results are presented on Figure 2 and summarized in Table 1, and the laboratory analytical report is included in Attachment 2.

DELINEATION ACTIVITIES

During May 2019, LTE personnel returned to the Site to delineate the lateral and vertical extent of impacted soil. Boreholes were advanced via handauger in the areas of preliminary soil samples SS01 through SS04 to depths of 3 feet and 4 feet bgs and soil samples SS01A through SS04A were collected. Boreholes BH01 through BH09 were advanced in and around the release area via hand auger to depths ranging from 1 foot bgs to 4 feet bgs. Soil was field screened in the boreholes using a PID and Hach® chloride QuanTab® test strips. Two delineation soil samples were collected for laboratory analysis from each borehole from depths ranging from 1 foot to 4 feet bgs. The delineation soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Midland, Texas. The soil sample locations and depths are depicted on Figure 3 and soil sample logs are included in Attachment 3.





Laboratory analytical results indicated that benzene, BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria in all delineation soil samples. Based on the laboratory analytical results, the lateral and vertical extent of impacted soil is defined. Laboratory analytical results are presented on Figure 3 and summarized in Table 1, and the laboratory analytical reports are included in Attachment 2.

ANALYTICAL RESULTS

Laboratory analytical results indicated that preliminary soil samples SS01 through SS04 contained concentrations of BTEX and TPH that exceeded the NMOCD Table 1 closure criteria. Laboratory analytical results for delineation soil samples SS01A through SS04A, BH01 through BH09, and BH01A through BH09A indicated that benzene, BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria.

Excavation of impacted soil was limited by the presence of active production equipment and pipelines, as evidenced on the attached Photo Log (Attachment 4). XTO safety policy restricts soil disturbing activities to a 2 foot radius of any on-site production equipment and pipelines. This XTO safety policy is established to protect workers and reduce the likelihood of compromising the foundation of the production equipment or pipelines. This policy was enforced for this release due to the impacted soil being within 2 feet of active production equipment or pipelines. Based on the location of the release, hydro-excavation was not possible due to lack of reach and access.

DEFERRAL REQUEST

Laboratory analytical results for preliminary soil samples SS01 through SS04 indicate impacted soil with BTEX and TPH concentrations exceeding the NMOCD Table 1 closure criteria was left in place. In compliance with the XTO safety policy regarding earth moving activities within 2 feet of active production equipment and pipelines, LTE was not able to excavate the impacted soil. The impacted soil remaining in place around and beneath the production equipment is delineated vertically and laterally by soil samples collected from boreholes SS01A through SS04A, BH01 through BH09, and BH01A through BH09A. Laboratory analytical results for delineation samples SS01A through SS04A, BH01 through BH09, and BH01A through BH09A indicated that benzene, BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria. An estimated 1,900 cubic yards of impacted soil remain in place, assuming a maximum 4 foot depth based on borehole soil samples SS01A through SS04A and BH01A through BH09A collected from depths ranging from 3 feet to 4 feet bgs that were compliant with the NMOCD Table 1 closure criteria.

XTO requests to complete remediation during any future major construction/alteration or final plugging and abandonment, whichever occurs first. LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. XTO requests deferral





of final remediation for RP Number 2RP-5330. An updated NMOCD Form C-141 is included as Attachment 1. A photographic log of the Site is included as Attachment 4.

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 that reads 'Ashley L. Ager'.

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD
Jim Amos, U.S. Bureau of Land Management
Crystal Weaver, U.S. Bureau of Land Management

Attachments:

Figure 1 Site Location Map
Figure 2 Preliminary Soil Sample Locations
Figure 3 Delineation Soil Sample Locations
Table 1 Soil Analytical Reports
Attachment 1 Initial/Final NMOCD Form C-141 (2RP-5330)
Attachment 2 Laboratory Analytical Reports
Attachment 3 Soil Sample Logs
Attachment 4 Photographic Log



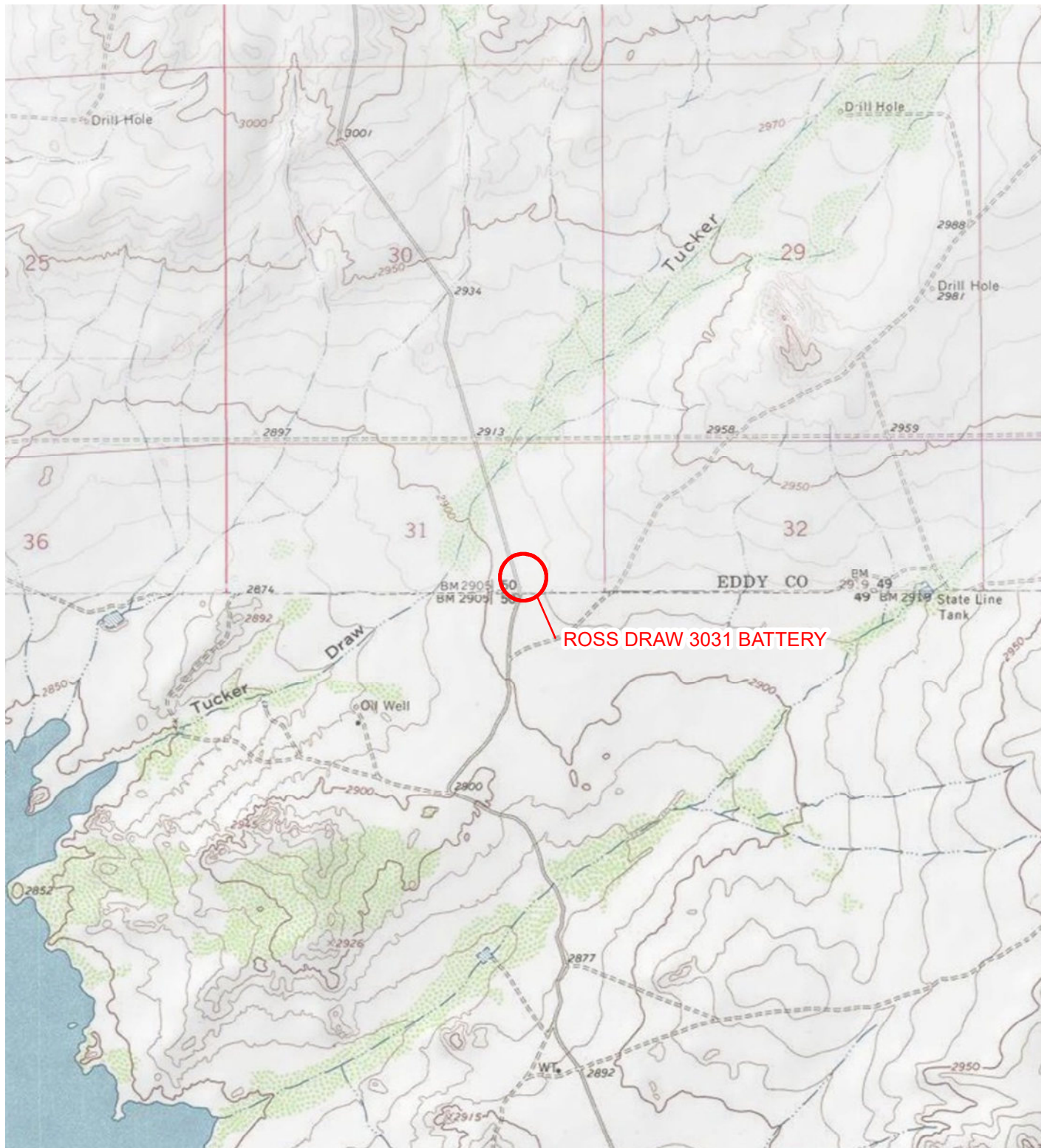
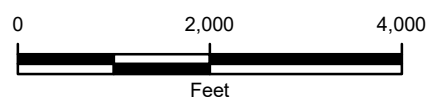


IMAGE COURTESY OF ESRI/USGS

LEGEND

○ SITE LOCATION



NOTE: REMEDIATION PERMIT
NUMBER 2RP-5330

FIGURE 1
SITE LOCATION MAP
ROSS DRAW 3031 BATTERY
UNIT H SEC 31 T26S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
 SAMPLE DATE
 NMOCD TABLE 1 CLOSURE CRITERIA (NMAC 19.15.29.12)
 B = 10 mg/kg
 BTEX = 50 mg/kg
 TPH = 100 mg/kg
 Cl = 600 mg/kg
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
BOLD: INDICATES RESULT EXCEEDS THE
 APPLICABLE STANDARD
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT

SS04@0.5'	SS04A@4'
03/20/2019	05/24/2019
B: 6.03	B: <0.00198
BTEX: 252	BTEX: 0.0118
TPH: 21,900	TPH: 71.0
Cl: 81	Cl: 65.5

SS03@0.5'	SS03A@4'
03/20/2019	05/20/2019
B: 6.36	B: <0.00201
BTEX: 282	BTEX: 0.00712
TPH: 26,300	TPH: 79.8
Cl: 80.6	Cl: 51.7

SS01@0.5'	SS01A@3'
03/20/2019	05/24/2019
B: 3.10	B: <0.00200
BTEX: 331	BTEX: <0.00200
TPH: 22,220	TPH: 60.0
Cl: 141	Cl: 69.7

SS02@0.5'	SS02A@3'
03/20/2019	05/20/2019
B: 5.41	B: <0.00199
BTEX: 260	BTEX: 0.0160
TPH: 28,000	TPH: 99.6
Cl: 74.7	Cl: <5.02

LEGEND

● SOIL SAMPLE WITH CONCENTRATIONS
EXCEEDING APPLICABLE STANDARDS

RELEASE EXTENT

B: BENZENE

BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE,
AND TOTAL XYLENES

TPH – TOTAL PETROLEUM HYDROCARBONS

Cl - CHLORIDE

NMAC – NEW MEXICO ADMINISTRATIVE CODE

NMOCD – NEW MEXICO OIL CONSERVATION DIVISION

NOTE: REMEDIATION PERMIT NUMBER 2RP-5330

IMAGE COURTESY OF ESRI

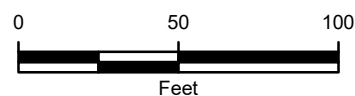
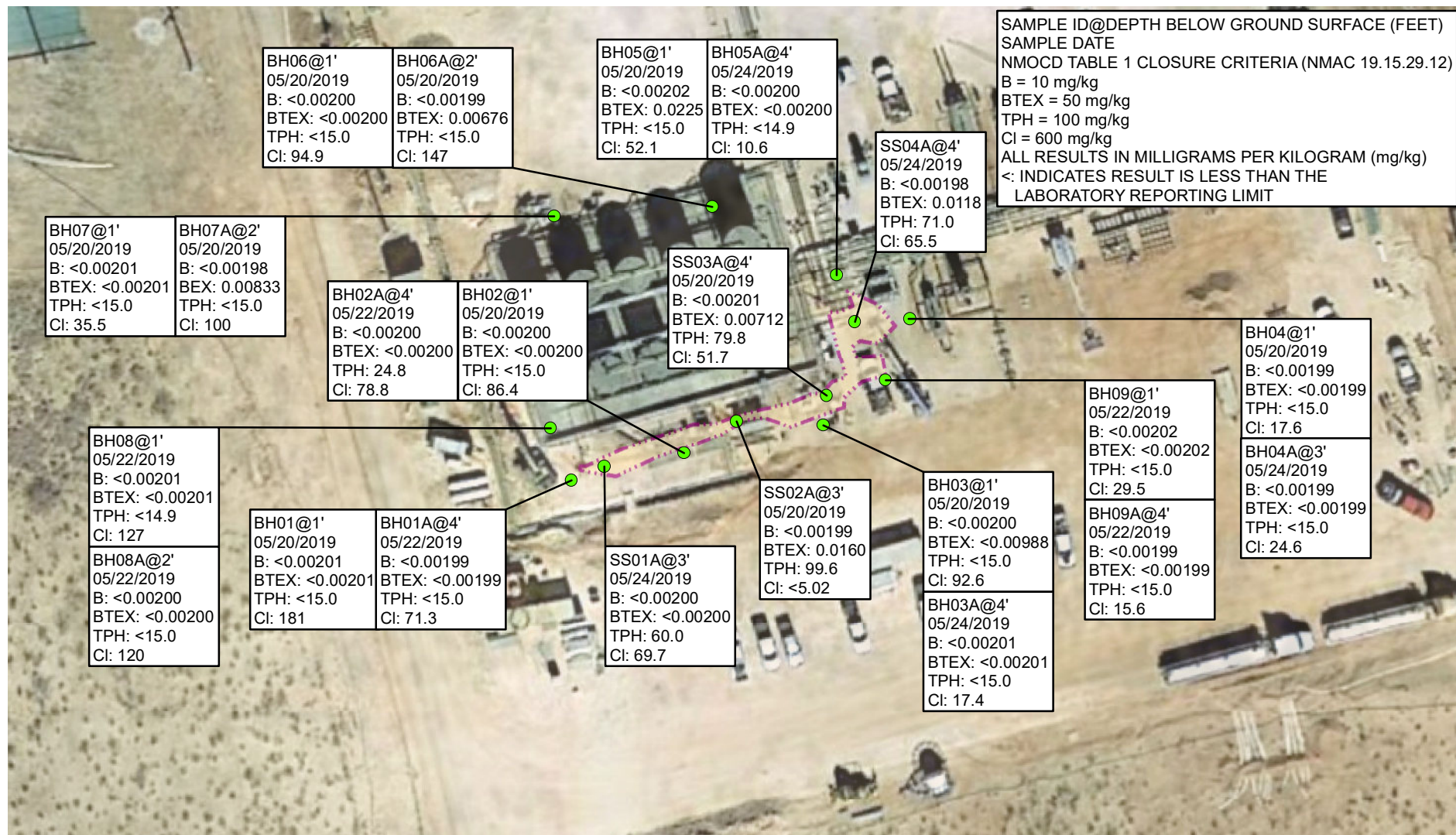


FIGURE 2
 SOIL SAMPLE LOCATIONS
 ROSS DRAW 3031 BATTERY
 UNIT H SEC 31 T26S R30E
 EDDY COUNTY, NEW MEXICO
 XTO ENERGY, INC.





LEGEND

- DELINEATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS
- RELEASE EXTENT

B: BENZENE
 BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
 TPH – TOTAL PETROLEUM HYDROCARBONS
 Cl - CHLORIDE
 NMAC – NEW MEXICO ADMINISTRATIVE CODE
 NMOCD – NEW MEXICO OIL CONSERVATION DIVISION
 NOTE: REMEDIATION PERMIT NUMBER 2RP-5330

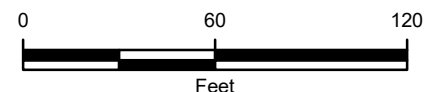


FIGURE 3
DELINEATION SOIL SAMPLE LOCATIONS
 ROSS DRAW 3031 BATTERY
 UNIT H SEC 31 T26S R30E
 EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



**TABLE 1
SOIL ANALYTICAL RESULTS**

**ROSS DRAW 3031 BATTERY
REMEDATION PERMIT NUMBER 2RP-5330
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS01	0.5	03/20/2019	3.10	68.4	14.5	245	331	10,100	11,000	1,120	21,100	22,220	141
SS02	0.5	03/20/2019	5.41	64.0	11.8	179	260	12,400	14,100	1,480	26,500	28,000	74.7
SS03	0.5	03/20/2019	6.36	71.3	13.4	191	282	12,700	12,300	1,290	25,000	26,300	80.6
SS04	0.5	03/20/2019	6.03	63.5	10.7	172	252	10,600	10,200	1,060	20,800	21,900	81
SS02A	3	05/20/2019	<0.00199	<0.00199	<0.00199	0.0160	0.0160	<15.0	99.6	<15.0	99.6	99.6	<5.02
SS03A	4	05/20/2019	<0.00201	<0.00201	<0.00201	0.00712	0.00712	<15.0	79.8	<15.0	79.8	79.8	51.7
BH01	1	05/20/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	181
BH02	1	05/20/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	86.4
BH03	1	05/20/2019	<0.00200	<0.00200	<0.00200	0.00988	0.00988	<15.0	<15.0	<15.0	<15.0	<15.0	92.6
BH04	1	05/20/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	17.6
BH05	1	05/20/2019	<0.00202	<0.00202	<0.00202	0.0225	0.0225	<15.0	<15.0	<15.0	<15.0	<15.0	52.1
BH06	1	05/20/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	94.9
BH06A	2	05/20/2019	<0.00199	<0.00199	<0.00199	0.00676	0.00676	<15.0	<15.0	<15.0	<15.0	<15.0	147
BH07	1	05/20/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	35.5
BH07A	2	05/20/2019	<0.00198	<0.00198	<0.00198	0.00833	0.00833	<15.0	<15.0	<15.0	<15.0	<15.0	100
BH01A	4	05/22/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	71.3
BH02A	4	05/22/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	24.8	<15.0	24.8	24.8	78.8
BH08	1	05/22/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	127
BH08A	2	05/22/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	120
BH09	1	05/22/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	29.5
BH09A	4	05/22/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	15.6
BH03A	4	05/24/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	17.4
BH04A	3	05/24/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	24.6
BH05A	4	05/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	10.6
SS01A	3	05/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	60.0	<15.0	60.0	60.0	69.7
SS04A	4	05/24/2019	<0.00198	<0.00198	<0.00198	0.0118	0.0118	<14.9	71.0	<14.9	71.0	71.0	65.5
NMOCDC Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600

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

NMOCDC - New Mexico Oil Conservation Division

NE - not established

Bold - indicates result exceeds the applicable regulatory standard

< - indicates result is below laboratory reporting limits

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

TPH - total petroleum hydrocarbons





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	NAB1909527986
District RP	2 2RP-5330
Facility ID	
Application ID	pAB1909527559

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) NAB1909527986
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.000694° Longitude -103.915633°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Ross Draw 3031 Battery	Site Type Bulk Storage and Separation Facility
Date Release Discovered 3/10/2019	API# (if applicable) 30-015-45121 (RD 31 Fed WAL Com 6H)

Unit Letter	Section	Township	Range	County
H	31	26S	30E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 14	Volume Recovered (bbls) 13
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A release of fluid occurred from the suction side of the new LACT unit. The nuts were only hand tightened on one of the flanges. The nuts loosened and allowed fluid to escape. A vacuum truck recovered standing fluid from the well pad. The flange was properly tightened and the facility returned to production. Additional third party resources have been retained to assist with remediation.

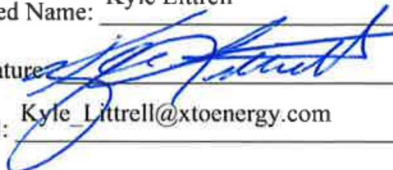
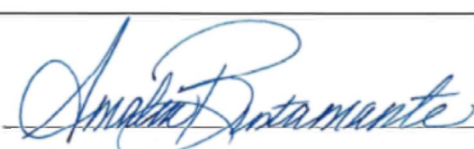
State of New Mexico
Oil Conservation Division

Incident ID	NAB1909527986
District RP	2 2RP-5330
Facility ID	
Application ID	pAB1909527559

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

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: N/A	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u> Signature:  email: <u>Kyle_Littrell@xtoenergy.com</u>	Title: <u>SH&E Supervisor</u> Date: <u>3-22-19</u> Telephone: <u>432-221-7331</u>
OCD Only Received by:  Date: <u>4/5/2019</u>	

Incident ID	
District RP	2RP-5330
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u> < 50 </u> (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☒ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

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

Incident ID	
District RP	2RP-5330
Facility ID	
Application ID	

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

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

Signature: _____  _____ Date: _____ 6/7/2019 _____

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

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	2RP-5330
Facility ID	
Application ID	

Remediation Plan

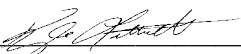
Remediation Plan Checklist: *Each of the following items must be included in the plan.*

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E CoordinatorSignature:  Date: 6/7/2019email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331**OCD Only**

Received by: _____ Date: _____

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

Signature: _____ Date: _____



Analytical Report 618605

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Ross Draw 30-31

02-APR-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

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

Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

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

Xenco-Lakeland: Florida (E84098)



02-APR-19

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

Reference: XENCO Report No(s): **618605**
Ross Draw 30-31
Project Address: ---

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 618605. 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. 618605 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kalei Stout

Midland Laboratory Director

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 618605



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	03-20-19 12:45	.5 ft	618605-001
SS02	S	03-20-19 13:00	.5 ft	618605-002
SS03	S	03-20-19 13:10	.5 ft	618605-003
SS04	S	03-20-19 13:25	.5 ft	618605-004



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Ross Draw 30-31*

Project ID: ---
Work Order Number(s): 618605

Report Date: 02-APR-19
Date Received: 03/22/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3083123 TPH by SW8015 Mod

Lab Sample ID 618605-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Gasoline Range Hydrocarbons (GRO) recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 618605-001, -002, -003, -004.

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

Batch: LBA-3084057 BTEX by EPA 8021B

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

Samples affected are: 618605-001,618605-004,618605-003,618605-002.

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



Certificate of Analysis Summary 618605

LT Environmental, Inc., Arvada, CO

Project Name: Ross Draw 30-31



Project Id: ---
Contact: Adrian Baker
Project Location: ---

Date Received in Lab: Fri Mar-22-19 11:55 am
Report Date: 02-APR-19
Project Manager: Kalei Stout

Analysis Requested	Lab Id:	618605-001	618605-002	618605-003	618605-004		
	Field Id:	SS01	SS02	SS03	SS04		
	Depth:	.5- ft	.5- ft	.5- ft	.5- ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	Mar-20-19 12:45	Mar-20-19 13:00	Mar-20-19 13:10	Mar-20-19 13:25		
BTEX by EPA 8021B	Extracted:	Mar-29-19 16:00	Mar-29-19 16:00	Mar-29-19 16:00	Mar-29-19 16:00		
	Analyzed:	Mar-30-19 03:14	Mar-30-19 03:33	Mar-30-19 03:52	Mar-30-19 04:11		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		3.10 2.00	5.41 2.00	6.36 2.00	6.03 1.99		
Toluene		68.4 2.00	64.0 2.00	71.3 2.00	63.5 1.99		
Ethylbenzene		14.5 2.00	11.8 2.00	13.4 2.00	10.7 1.99		
m,p-Xylenes		195 4.01	143 4.01	153 3.99	137 3.98		
o-Xylene		49.9 2.00	36.0 2.00	38.3 2.00	35.0 1.99		
Total Xylenes		245 2.00	179 2.00	191 2.00	172 1.99		
Total BTEX		331 2.00	260 2.00	282 2.00	252 1.99		
Inorganic Anions by EPA 300	Extracted:	Mar-23-19 18:30	Mar-23-19 18:30	Mar-23-19 18:30	Mar-23-19 18:30		
	Analyzed:	Mar-24-19 02:11	Mar-24-19 02:56	Mar-24-19 02:50	Mar-24-19 03:08		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		141 5.02	74.7 5.03	80.6 4.98	80.7 5.04		
TPH by SW8015 Mod	Extracted:	Mar-23-19 11:00	Mar-23-19 11:00	Mar-23-19 11:00	Mar-23-19 11:00		
	Analyzed:	Mar-24-19 12:11	Mar-24-19 13:10	Mar-24-19 13:29	Mar-24-19 13:49		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		10100 74.9	12400 74.8	12700 74.8	10600 74.7		
Diesel Range Organics (DRO)		11000 74.9	14100 74.8	12300 74.8	10200 74.7		
Motor Oil Range Hydrocarbons (MRO)		1120 74.9	1480 74.8	1290 74.8	1060 74.7		
Total TPH		22200 74.9	28000 74.8	26300 74.8	21900 74.7		

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

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

Kalei Stout
Midland Laboratory Director



Certificate of Analytical Results 618605



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **SS01**
Lab Sample Id: 618605-001

Matrix: Soil
Date Collected: 03.20.19 12.45

Date Received: 03.22.19 11.55
Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3083132

Date Prep: 03.23.19 18.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	141	5.02	mg/kg	03.24.19 02.11		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3083123

Date Prep: 03.23.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	10100	74.9	mg/kg	03.24.19 12.11		5
Diesel Range Organics (DRO)	C10C28DRO	11000	74.9	mg/kg	03.24.19 12.11		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	1120	74.9	mg/kg	03.24.19 12.11		5
Total TPH	PHC635	22200	74.9	mg/kg	03.24.19 12.11		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	102	%	70-135	03.24.19 12.11		
o-Terphenyl	84-15-1	119	%	70-135	03.24.19 12.11		



Certificate of Analytical Results 618605



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **SS01**
Lab Sample Id: 618605-001

Matrix: Soil
Date Collected: 03.20.19 12.45

Date Received: 03.22.19 11.55
Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084057

Date Prep: 03.29.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	3.10	2.00	mg/kg	03.30.19 03.14		1000
Toluene	108-88-3	68.4	2.00	mg/kg	03.30.19 03.14		1000
Ethylbenzene	100-41-4	14.5	2.00	mg/kg	03.30.19 03.14		1000
m,p-Xylenes	179601-23-1	195	4.01	mg/kg	03.30.19 03.14		1000
o-Xylene	95-47-6	49.9	2.00	mg/kg	03.30.19 03.14		1000
Total Xylenes	1330-20-7	245	2.00	mg/kg	03.30.19 03.14		1000
Total BTEX		331	2.00	mg/kg	03.30.19 03.14		1000
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	143	%	70-130	03.30.19 03.14	**	
1,4-Difluorobenzene	540-36-3	99	%	70-130	03.30.19 03.14		



Certificate of Analytical Results 618605



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: SS02
Lab Sample Id: 618605-002

Matrix: Soil
Date Collected: 03.20.19 13.00

Date Received: 03.22.19 11.55
Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3083132

Date Prep: 03.23.19 18.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	74.7	5.03	mg/kg	03.24.19 02.56		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3083123

Date Prep: 03.23.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	12400	74.8	mg/kg	03.24.19 13.10		5
Diesel Range Organics (DRO)	C10C28DRO	14100	74.8	mg/kg	03.24.19 13.10		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	1480	74.8	mg/kg	03.24.19 13.10		5
Total TPH	PHC635	28000	74.8	mg/kg	03.24.19 13.10		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	03.24.19 13.10	
o-Terphenyl	84-15-1	84	%	70-135	03.24.19 13.10	



Certificate of Analytical Results 618605



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: SS02
Lab Sample Id: 618605-002

Matrix: Soil
Date Collected: 03.20.19 13.00

Date Received: 03.22.19 11.55
Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084057

Date Prep: 03.29.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	5.41	2.00	mg/kg	03.30.19 03.33		1000
Toluene	108-88-3	64.0	2.00	mg/kg	03.30.19 03.33		1000
Ethylbenzene	100-41-4	11.8	2.00	mg/kg	03.30.19 03.33		1000
m,p-Xylenes	179601-23-1	143	4.01	mg/kg	03.30.19 03.33		1000
o-Xylene	95-47-6	36.0	2.00	mg/kg	03.30.19 03.33		1000
Total Xylenes	1330-20-7	179	2.00	mg/kg	03.30.19 03.33		1000
Total BTEX		260	2.00	mg/kg	03.30.19 03.33		1000
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	132	%	70-130	03.30.19 03.33	**	
1,4-Difluorobenzene	540-36-3	100	%	70-130	03.30.19 03.33		



Certificate of Analytical Results 618605



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: SS03
Lab Sample Id: 618605-003

Matrix: Soil
Date Collected: 03.20.19 13.10

Date Received: 03.22.19 11.55
Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3083132

Date Prep: 03.23.19 18.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	80.6	4.98	mg/kg	03.24.19 02.50		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3083123

Date Prep: 03.23.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	12700	74.8	mg/kg	03.24.19 13.29		5
Diesel Range Organics (DRO)	C10C28DRO	12300	74.8	mg/kg	03.24.19 13.29		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	1290	74.8	mg/kg	03.24.19 13.29		5
Total TPH	PHC635	26300	74.8	mg/kg	03.24.19 13.29		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	03.24.19 13.29	
o-Terphenyl	84-15-1	127	%	70-135	03.24.19 13.29	



Certificate of Analytical Results 618605



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: SS03
Lab Sample Id: 618605-003

Matrix: Soil
Date Collected: 03.20.19 13.10

Date Received: 03.22.19 11.55
Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084057

Date Prep: 03.29.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	6.36	2.00	mg/kg	03.30.19 03.52		1000
Toluene	108-88-3	71.3	2.00	mg/kg	03.30.19 03.52		1000
Ethylbenzene	100-41-4	13.4	2.00	mg/kg	03.30.19 03.52		1000
m,p-Xylenes	179601-23-1	153	3.99	mg/kg	03.30.19 03.52		1000
o-Xylene	95-47-6	38.3	2.00	mg/kg	03.30.19 03.52		1000
Total Xylenes	1330-20-7	191	2.00	mg/kg	03.30.19 03.52		1000
Total BTEX		282	2.00	mg/kg	03.30.19 03.52		1000
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	03.30.19 03.52		
4-Bromofluorobenzene	460-00-4	131	%	70-130	03.30.19 03.52	**	



Certificate of Analytical Results 618605



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **SS04**
Lab Sample Id: 618605-004

Matrix: Soil
Date Collected: 03.20.19 13.25

Date Received: 03.22.19 11.55
Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3083132

Date Prep: 03.23.19 18.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	80.7	5.04	mg/kg	03.24.19 03.08		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3083123

Date Prep: 03.23.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	10600	74.7	mg/kg	03.24.19 13.49		5
Diesel Range Organics (DRO)	C10C28DRO	10200	74.7	mg/kg	03.24.19 13.49		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	1060	74.7	mg/kg	03.24.19 13.49		5
Total TPH	PHC635	21900	74.7	mg/kg	03.24.19 13.49		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	03.24.19 13.49	
o-Terphenyl	84-15-1	103	%	70-135	03.24.19 13.49	



Certificate of Analytical Results 618605



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **SS04**
Lab Sample Id: 618605-004

Matrix: Soil
Date Collected: 03.20.19 13.25

Date Received: 03.22.19 11.55
Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084057

Date Prep: 03.29.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	6.03	1.99	mg/kg	03.30.19 04.11		1000
Toluene	108-88-3	63.5	1.99	mg/kg	03.30.19 04.11		1000
Ethylbenzene	100-41-4	10.7	1.99	mg/kg	03.30.19 04.11		1000
m,p-Xylenes	179601-23-1	137	3.98	mg/kg	03.30.19 04.11		1000
o-Xylene	95-47-6	35.0	1.99	mg/kg	03.30.19 04.11		1000
Total Xylenes	1330-20-7	172	1.99	mg/kg	03.30.19 04.11		1000
Total BTEX		252	1.99	mg/kg	03.30.19 04.11		1000
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	132	%	70-130	03.30.19 04.11	**	
1,4-Difluorobenzene	540-36-3	100	%	70-130	03.30.19 04.11		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



QC Summary 618605

LT Environmental, Inc.

Ross Draw 30-31

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3083132

MB Sample Id: 7674205-1-BLK

Matrix: Solid

LCS Sample Id: 7674205-1-BKS

Prep Method: E300P

Date Prep: 03.23.19

LCSD Sample Id: 7674205-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	253	101	250	100	90-110	1	20	mg/kg	03.24.19 00:40	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3083132

Parent Sample Id: 618581-004

Matrix: Soil

MS Sample Id: 618581-004 S

Prep Method: E300P

Date Prep: 03.23.19

MSD Sample Id: 618581-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	43.2	248	287	98	292	100	90-110	2	20	mg/kg	03.24.19 00:57	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3083132

Parent Sample Id: 618605-001

Matrix: Soil

MS Sample Id: 618605-001 S

Prep Method: E300P

Date Prep: 03.23.19

MSD Sample Id: 618605-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	141	251	388	98	398	102	90-110	3	20	mg/kg	03.24.19 02:16	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3083123

MB Sample Id: 7674187-1-BLK

Matrix: Solid

LCS Sample Id: 7674187-1-BKS

Prep Method: TX1005P

Date Prep: 03.23.19

LCSD Sample Id: 7674187-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1060	106	1010	101	70-135	5	20	mg/kg	03.23.19 17:56	
Diesel Range Organics (DRO)	<8.13	1000	1160	116	1090	109	70-135	6	20	mg/kg	03.23.19 17:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		120		128		70-135	%	03.23.19 17:56
o-Terphenyl	121		118		114		70-135	%	03.23.19 17:56

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



QC Summary 618605

LT Environmental, Inc.

Ross Draw 30-31

Analytical Method: TPH by SW8015 Mod

Seq Number: 3083123

Parent Sample Id: 618605-001

Matrix: Soil

MS Sample Id: 618605-001 S

Prep Method: TX1005P

Date Prep: 03.23.19

MSD Sample Id: 618605-001 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)	10100	1000	11700	160	11300	120	70-135	3	20	mg/kg	03.24.19 12:31	X
Diesel Range Organics (DRO)	11000	1000	12200	120	12000	100	70-135	2	20	mg/kg	03.24.19 12:31	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		120		70-135	%	03.24.19 12:31
o-Terphenyl	127		127		70-135	%	03.24.19 12:31

Analytical Method: BTEX by EPA 8021B

Seq Number: 3084057

MB Sample Id: 7674756-1-BLK

Matrix: Solid

LCS Sample Id: 7674756-1-BKS

Prep Method: SW5030B

Date Prep: 03.29.19

LCSD Sample Id: 7674756-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0994	0.102	103	0.101	101	70-130	1	35	mg/kg	03.29.19 19:23	
Toluene	<0.000453	0.0994	0.105	106	0.104	104	70-130	1	35	mg/kg	03.29.19 19:23	
Ethylbenzene	<0.000561	0.0994	0.0998	100	0.0991	99	70-130	1	35	mg/kg	03.29.19 19:23	
m,p-Xylenes	<0.00101	0.199	0.202	102	0.202	101	70-130	0	35	mg/kg	03.29.19 19:23	
o-Xylene	<0.000342	0.0994	0.102	103	0.103	103	70-130	1	35	mg/kg	03.29.19 19:23	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		98		101		70-130	%	03.29.19 19:23
4-Bromofluorobenzene	86		94		107		70-130	%	03.29.19 19:23

Analytical Method: BTEX by EPA 8021B

Seq Number: 3084057

Parent Sample Id: 618714-015

Matrix: Soil

MS Sample Id: 618714-015 S

Prep Method: SW5030B

Date Prep: 03.29.19

MSD Sample Id: 618714-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0996	0.0799	80	0.0886	89	70-130	10	35	mg/kg	03.29.19 20:01	
Toluene	<0.000454	0.0996	0.0809	81	0.0906	91	70-130	11	35	mg/kg	03.29.19 20:01	
Ethylbenzene	<0.000563	0.0996	0.0726	73	0.0836	84	70-130	14	35	mg/kg	03.29.19 20:01	
m,p-Xylenes	<0.00101	0.199	0.146	73	0.169	85	70-130	15	35	mg/kg	03.29.19 20:01	
o-Xylene	<0.000343	0.0996	0.0745	75	0.0863	87	70-130	15	35	mg/kg	03.29.19 20:01	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		101		70-130	%	03.29.19 20:01
4-Bromofluorobenzene	107		106		70-130	%	03.29.19 20:01

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:

219005

Hobbs, NM (505) 392-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

www.xenco.com

Page 1 of 1

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Little
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:	
Phone:	432-704-5178	Email:	kgreen@ltenv.com/baker@ltenv.com

Project Name:	Ross Draw 30-31	Turn Around	
Project Number:	3/10/2019	Routine	☒
P.O. Number:		Rush:	
Sampler's Name:	Garnett Green	Due Date:	

Temp Blank:	Yes ☒ No ☒	Wet Ice:	Yes ☒ No ☒
Thermometer Used:	Yes ☒ No ☒	Correction Factor:	0.1
Cooler Custody Seals:	Yes ☒ No ☒	Total Containers:	
Sample Custody Seals:	Yes ☒ No ☒		

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☒	Wet Ice:	Yes ☒ No ☒
	Thermometer Used:	Yes ☒ No ☒	Correction Factor:	0.1
Received intact:	Yes ☒ No ☒			
Cooler Custody Seals:	Yes ☒ No ☒			
Sample Custody Seals:	Yes ☒ No ☒			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
5501	S	3/10/19	1245	.5'	1	X	X	X
5502	S		1300		1	X	X	X
5503	S		1310		1	X	X	X
5504	S		1325		1	X	X	X

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		3/14/19 - 1900			03/21/19 10:15

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															

1631 / 245.1 / 7470 / 7471 : Hg

32,001416, -103,914527

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

Sample Comments

Revised Date 05/11/10 Rev. 2018.1



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 03/22/2019 11:55:00 AM

Work Order #: 618605

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 03/22/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 03/22/2019

Analytical Report 625759

for
LT Environmental, Inc.

Project Manager: Dan Moir

Ross Draw 30-31

30-MAY-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)



30-MAY-19

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

Reference: XENCO Report No(s): **625759**
Ross Draw 30-31
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) 625759. 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. 625759 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer
Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	05-20-19 12:25	1 ft	625759-001
BH01A	S	05-22-19 09:00	4 ft	625759-002
BH02	S	05-20-19 12:40	1 ft	625759-003
BH02A	S	05-22-19 09:25	4 ft	625759-004
BH03	S	05-20-19 12:55	1 ft	625759-005
BH03A	S	05-24-19 10:30	4 ft	625759-006
BH04	S	05-20-19 13:10	1 ft	625759-007
BH04A	S	05-24-19 10:45	3 ft	625759-008
BH05	S	05-20-19 13:25	1 ft	625759-009
BH05A	S	05-24-19 11:45	4 ft	625759-010
BH06	S	05-20-19 13:40	1 ft	625759-011
BH06A	S	05-20-19 13:45	2 ft	625759-012
BH07	S	05-20-19 13:55	1 ft	625759-013
BH07A	S	05-20-19 14:00	2 ft	625759-014
BH08	S	05-22-19 09:40	1 ft	625759-015
BH08A	S	05-22-19 09:45	2 ft	625759-016
BH09	S	05-22-19 08:15	1 ft	625759-017
BH09A	S	05-22-19 08:40	4 ft	625759-018



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Ross Draw 30-31*

Project ID: ---
Work Order Number(s): 625759

Report Date: 30-MAY-19
Date Received: 05/29/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3090589 BTEX by EPA 8021B

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



Certificate of Analysis Summary 625759

LT Environmental, Inc., Arvada, CO

Project Name: Ross Draw 30-31



Project Id: ---
Contact: Dan Moir
Project Location: ---

Date Received in Lab: Wed May-29-19 12:15 pm
Report Date: 30-MAY-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	625759-001	625759-002	625759-003	625759-004	625759-005	625759-006
	Field Id:	BH01	BH01A	BH02	BH02A	BH03	BH03A
	Depth:	1- ft	4- ft	1- ft	4- ft	1- ft	4- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	May-20-19 12:25	May-22-19 09:00	May-20-19 12:40	May-22-19 09:25	May-20-19 12:55	May-24-19 10:30
BTEX by EPA 8021B	Extracted:	May-29-19 13:00	May-29-19 13:00	May-29-19 13:00	May-29-19 13:00	May-29-19 13:00	May-29-19 13:00
	Analyzed:	May-29-19 23:24	May-29-19 23:43	May-30-19 00:02	May-30-19 00:21	May-30-19 00:40	May-30-19 00:59
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
m,p-Xylenes		<0.00402 0.00402	<0.00398 0.00398	<0.00400 0.00400	<0.00401 0.00401	0.00686 0.00399	<0.00402 0.00402
o-Xylene		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	0.00302 0.00200	<0.00201 0.00201
Total Xylenes		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	0.00988 0.00200	<0.00201 0.00201
Total BTEX		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	0.00988 0.00200	<0.00201 0.00201
Chloride by EPA 300	Extracted:	** ** *	** ** *	** ** *	** ** *	** ** *	** ** *
	Analyzed:	May-29-19 15:10	May-29-19 18:34	May-29-19 15:24	May-29-19 18:42	May-29-19 15:53	May-29-19 16:01
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		181 4.99	71.3 4.97	86.4 4.95	78.8 5.03	92.6 5.01	17.4 5.00
TPH by SW8015 Mod	Extracted:	** ** *	** ** *	** ** *	** ** *	** ** *	** ** *
	Analyzed:	May-29-19 13:41	May-29-19 14:40	May-29-19 14:59	May-29-19 15:19	May-29-19 15:38	May-29-19 15:58
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	24.8 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	24.8 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	24.8 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 Analysis Summary 625759

LT Environmental, Inc., Arvada, CO

Project Name: Ross Draw 30-31



Project Id: ---
Contact: Dan Moir
Project Location: ---

Date Received in Lab: Wed May-29-19 12:15 pm
Report Date: 30-MAY-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	625759-007	625759-008	625759-009	625759-010	625759-011	625759-012
	Field Id:	BH04	BH04A	BH05	BH05A	BH06	BH06A
	Depth:	1- ft	3- ft	1- ft	4- ft	1- ft	2- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	May-20-19 13:10	May-24-19 10:45	May-20-19 13:25	May-24-19 11:45	May-20-19 13:40	May-20-19 13:45
BTEX by EPA 8021B	Extracted:	May-29-19 13:00	May-29-19 13:00	May-29-19 13:00	May-29-19 13:00	May-29-19 13:00	May-29-19 13:00
	Analyzed:	May-30-19 01:18	May-30-19 01:37	May-30-19 01:56	May-30-19 02:15	May-30-19 03:29	May-30-19 03:48
	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	<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	0.0167 0.00403	<0.00400 0.00400	<0.00401 0.00401	0.00466 0.00398
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	0.00578 0.00202	<0.00200 0.00200	<0.00200 0.00200	0.00210 0.00199
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	0.0225 0.00202	<0.00200 0.00200	<0.00200 0.00200	0.00676 0.00199
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	0.0225 0.00202	<0.00200 0.00200	<0.00200 0.00200	0.00676 0.00199
Chloride by EPA 300	Extracted:	** ** *	** ** *	** ** *	** ** *	** ** *	** ** *
	Analyzed:	May-29-19 14:48	May-29-19 16:08	May-29-19 16:53	May-29-19 18:49	May-29-19 16:22	May-29-19 17:14
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		17.6 5.00	24.6 5.01	52.1 5.02	10.6 5.01	94.9 5.01	147 5.02
TPH by SW8015 Mod	Extracted:	** ** *	** ** *	** ** *	** ** *	** ** *	** ** *
	Analyzed:	May-29-19 16:17	May-29-19 16:36	May-29-19 16:56	May-29-19 17:15	May-29-19 17:54	May-29-19 18:13
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0

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Version: 1.0%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 625759

LT Environmental, Inc., Arvada, CO

Project Name: Ross Draw 30-31



Project Id: ---
Contact: Dan Moir
Project Location: ---

Date Received in Lab: Wed May-29-19 12:15 pm
Report Date: 30-MAY-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	625759-013	625759-014	625759-015	625759-016	625759-017	625759-018
	Field Id:	BH07	BH07A	BH08	BH08A	BH09	BH09A
	Depth:	1- ft	2- ft	1- ft	2- ft	1- ft	4- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	May-20-19 13:55	May-20-19 14:00	May-22-19 09:40	May-22-19 09:45	May-22-19 08:15	May-22-19 08:40
BTEX by EPA 8021B	Extracted:	May-29-19 13:00	May-29-19 13:00	May-29-19 13:00	May-29-19 13:00	May-29-19 13:00	May-29-19 13:00
	Analyzed:	May-30-19 04:07	May-30-19 04:26	May-30-19 04:45	May-30-19 05:04	May-30-19 05:23	May-30-19 05:42
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199
Toluene		<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199
Ethylbenzene		<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199
m,p-Xylenes		<0.00402 0.00402	0.00585 0.00397	<0.00402 0.00402	<0.00399 0.00399	<0.00403 0.00403	<0.00398 0.00398
o-Xylene		<0.00201 0.00201	0.00248 0.00198	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199
Total Xylenes		<0.00201 0.00201	0.00833 0.00198	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199
Total BTEX		<0.00201 0.00201	0.00833 0.00198	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199
Chloride by EPA 300	Extracted:	** ** ** *	** ** ** *	** ** ** *	** ** ** *	** ** ** *	** ** ** *
	Analyzed:	May-29-19 17:22	May-29-19 17:43	May-29-19 17:51	May-29-19 17:58	May-29-19 18:05	May-29-19 18:12
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		35.5 5.00	100 5.02	127 5.00	120 5.03	29.5 4.97	15.6 5.04
TPH by SW8015 Mod	Extracted:	** ** ** *	** ** ** *	** ** ** *	** ** ** *	** ** ** *	** ** ** *
	Analyzed:	May-29-19 18:32	May-29-19 18:52	May-29-19 19:11	May-29-19 19:30	May-29-19 19:49	May-29-19 20:09
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<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	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH01**
Lab Sample Id: 625759-001

Matrix: Soil
Date Collected: 05.20.19 12.25

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	181	4.99	mg/kg	05.29.19 15.10		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 13.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 13.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 13.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 13.41	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 13.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	05.29.19 13.41	
o-Terphenyl	84-15-1	93	%	70-135	05.29.19 13.41	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH01**
Lab Sample Id: 625759-001

Matrix: Soil
Date Collected: 05.20.19 12.25

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090589

Date Prep: 05.29.19 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.29.19 23.24	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.29.19 23.24	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.29.19 23.24	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.29.19 23.24	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.29.19 23.24	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.29.19 23.24	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.29.19 23.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	70-130	05.29.19 23.24		
4-Bromofluorobenzene	460-00-4	114	%	70-130	05.29.19 23.24		



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH01A**
Lab Sample Id: 625759-002

Matrix: Soil
Date Collected: 05.22.19 09.00

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	71.3	4.97	mg/kg	05.29.19 18.34		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 14.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 14.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 14.40	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 14.40	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 14.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	05.29.19 14.40	
o-Terphenyl	84-15-1	93	%	70-135	05.29.19 14.40	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH01A**
Lab Sample Id: 625759-002

Matrix: Soil
Date Collected: 05.22.19 09.00

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.29.19 13.00

Basis: Wet Weight

Seq Number: 3090589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.29.19 23.43	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.29.19 23.43	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.29.19 23.43	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.29.19 23.43	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.29.19 23.43	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.29.19 23.43	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.29.19 23.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	122	%	70-130	05.29.19 23.43		
1,4-Difluorobenzene	540-36-3	95	%	70-130	05.29.19 23.43		



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH02**
Lab Sample Id: 625759-003

Matrix: Soil
Date Collected: 05.20.19 12.40

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	86.4	4.95	mg/kg	05.29.19 15.24		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 14.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 14.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 14.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 14.59	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 14.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	05.29.19 14.59	
o-Terphenyl	84-15-1	101	%	70-135	05.29.19 14.59	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH02**
Lab Sample Id: 625759-003

Matrix: Soil
Date Collected: 05.20.19 12.40

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090589

Date Prep: 05.29.19 13.00

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	05.30.19 00.02	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.30.19 00.02	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.30.19 00.02	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	05.30.19 00.02	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.30.19 00.02	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.30.19 00.02	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.30.19 00.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	05.30.19 00.02		
1,4-Difluorobenzene	540-36-3	97	%	70-130	05.30.19 00.02		



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH02A**
Lab Sample Id: 625759-004

Matrix: Soil
Date Collected: 05.22.19 09.25

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300
Tech: SPC
Analyst: SPC
Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	78.8	5.03	mg/kg	05.29.19 18.42		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 15.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	24.8	15.0	mg/kg	05.29.19 15.19		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 15.19	U	1
Total TPH	PHC635	24.8	15.0	mg/kg	05.29.19 15.19		1
Total GRO-DRO	PHC628	24.8	15.0	mg/kg	05.29.19 15.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	05.29.19 15.19	
o-Terphenyl	84-15-1	94	%	70-135	05.29.19 15.19	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH02A**
Lab Sample Id: 625759-004

Matrix: Soil
Date Collected: 05.22.19 09.25

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090589

Date Prep: 05.29.19 13.00

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	05.30.19 00.21	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.30.19 00.21	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.30.19 00.21	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.30.19 00.21	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.30.19 00.21	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.30.19 00.21	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.30.19 00.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	05.30.19 00.21		
4-Bromofluorobenzene	460-00-4	118	%	70-130	05.30.19 00.21		



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH03**
Lab Sample Id: 625759-005

Matrix: Soil
Date Collected: 05.20.19 12.55

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300
Tech: SPC
Analyst: SPC
Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	92.6	5.01	mg/kg	05.29.19 15.53		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 15.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 15.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 15.38	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 15.38	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 15.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	05.29.19 15.38	
o-Terphenyl	84-15-1	94	%	70-135	05.29.19 15.38	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH03**
Lab Sample Id: 625759-005

Matrix: Soil
Date Collected: 05.20.19 12.55

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090589

Date Prep: 05.29.19 13.00

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	05.30.19 00.40	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.30.19 00.40	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.30.19 00.40	U	1
m,p-Xylenes	179601-23-1	0.00686	0.00399	mg/kg	05.30.19 00.40		1
o-Xylene	95-47-6	0.00302	0.00200	mg/kg	05.30.19 00.40		1
Total Xylenes	1330-20-7	0.00988	0.00200	mg/kg	05.30.19 00.40		1
Total BTEX		0.00988	0.00200	mg/kg	05.30.19 00.40		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96		%	70-130	05.30.19 00.40	
4-Bromofluorobenzene	460-00-4	118		%	70-130	05.30.19 00.40	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH03A**
Lab Sample Id: 625759-006

Matrix: Soil
Date Collected: 05.24.19 10.30

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.4	5.00	mg/kg	05.29.19 16.01		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 15.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 15.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 15.58	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 15.58	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 15.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	05.29.19 15.58	
o-Terphenyl	84-15-1	94	%	70-135	05.29.19 15.58	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH03A**
Lab Sample Id: 625759-006

Matrix: Soil
Date Collected: 05.24.19 10.30

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090589

Date Prep: 05.29.19 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.30.19 00.59	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.30.19 00.59	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.30.19 00.59	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.30.19 00.59	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.30.19 00.59	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.30.19 00.59	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.30.19 00.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	05.30.19 00.59		
1,4-Difluorobenzene	540-36-3	97	%	70-130	05.30.19 00.59		



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH04**
Lab Sample Id: 625759-007

Matrix: Soil
Date Collected: 05.20.19 13.10

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.6	5.00	mg/kg	05.29.19 14.48		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 16.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 16.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 16.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 16.17	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 16.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	05.29.19 16.17	
o-Terphenyl	84-15-1	94	%	70-135	05.29.19 16.17	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH04**
Lab Sample Id: 625759-007

Matrix: Soil
Date Collected: 05.20.19 13.10

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.29.19 13.00

Basis: Wet Weight

Seq Number: 3090589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.30.19 01.18	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.30.19 01.18	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.30.19 01.18	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.30.19 01.18	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.30.19 01.18	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.30.19 01.18	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.30.19 01.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	05.30.19 01.18		
4-Bromofluorobenzene	460-00-4	119	%	70-130	05.30.19 01.18		



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH04A**
Lab Sample Id: 625759-008

Matrix: Soil
Date Collected: 05.24.19 10.45

Date Received: 05.29.19 12.15
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300
Tech: SPC
Analyst: SPC
Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.6	5.01	mg/kg	05.29.19 16.08		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 16.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 16.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 16.36	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 16.36	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 16.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	05.29.19 16.36	
o-Terphenyl	84-15-1	91	%	70-135	05.29.19 16.36	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH04A**
Lab Sample Id: 625759-008

Matrix: Soil
Date Collected: 05.24.19 10.45

Date Received: 05.29.19 12.15
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090589

Date Prep: 05.29.19 13.00

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	05.30.19 01.37	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.30.19 01.37	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.30.19 01.37	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.30.19 01.37	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.30.19 01.37	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.30.19 01.37	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.30.19 01.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	70-130	05.30.19 01.37		
4-Bromofluorobenzene	460-00-4	124	%	70-130	05.30.19 01.37		



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH05**
Lab Sample Id: 625759-009

Matrix: Soil
Date Collected: 05.20.19 13.25

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	52.1	5.02	mg/kg	05.29.19 16.53		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 16.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 16.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 16.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 16.56	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 16.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	05.29.19 16.56	
o-Terphenyl	84-15-1	97	%	70-135	05.29.19 16.56	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH05**
Lab Sample Id: 625759-009

Matrix: Soil
Date Collected: 05.20.19 13.25

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090589

Date Prep: 05.29.19 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.30.19 01.56	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.30.19 01.56	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.30.19 01.56	U	1
m,p-Xylenes	179601-23-1	0.0167	0.00403	mg/kg	05.30.19 01.56		1
o-Xylene	95-47-6	0.00578	0.00202	mg/kg	05.30.19 01.56		1
Total Xylenes	1330-20-7	0.0225	0.00202	mg/kg	05.30.19 01.56		1
Total BTEX		0.0225	0.00202	mg/kg	05.30.19 01.56		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	05.30.19 01.56		
1,4-Difluorobenzene	540-36-3	94	%	70-130	05.30.19 01.56		



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH05A**
Lab Sample Id: 625759-010

Matrix: Soil
Date Collected: 05.24.19 11.45

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.6	5.01	mg/kg	05.29.19 18.49		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	05.29.19 17.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	05.29.19 17.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	05.29.19 17.15	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	05.29.19 17.15	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	05.29.19 17.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	05.29.19 17.15	
o-Terphenyl	84-15-1	93	%	70-135	05.29.19 17.15	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH05A**
Lab Sample Id: 625759-010

Matrix: Soil
Date Collected: 05.24.19 11.45

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090589

Date Prep: 05.29.19 13.00

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	05.30.19 02.15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.30.19 02.15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.30.19 02.15	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	05.30.19 02.15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.30.19 02.15	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.30.19 02.15	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.30.19 02.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	122	%	70-130	05.30.19 02.15		
1,4-Difluorobenzene	540-36-3	95	%	70-130	05.30.19 02.15		



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH06**
Lab Sample Id: 625759-011

Matrix: Soil
Date Collected: 05.20.19 13.40

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	94.9	5.01	mg/kg	05.29.19 16.22		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 17.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 17.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 17.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 17.54	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 17.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	05.29.19 17.54	
o-Terphenyl	84-15-1	93	%	70-135	05.29.19 17.54	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH06**
Lab Sample Id: 625759-011

Matrix: Soil
Date Collected: 05.20.19 13.40

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.29.19 13.00

Basis: Wet Weight

Seq Number: 3090589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.30.19 03.29	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.30.19 03.29	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.30.19 03.29	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.30.19 03.29	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.30.19 03.29	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.30.19 03.29	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.30.19 03.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	05.30.19 03.29		
4-Bromofluorobenzene	460-00-4	114	%	70-130	05.30.19 03.29		



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH06A**
Lab Sample Id: 625759-012

Matrix: Soil
Date Collected: 05.20.19 13.45

Date Received: 05.29.19 12.15
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300
Tech: SPC
Analyst: SPC
Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	147	5.02	mg/kg	05.29.19 17.14		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 18.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 18.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 18.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 18.13	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 18.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	05.29.19 18.13	
o-Terphenyl	84-15-1	94	%	70-135	05.29.19 18.13	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH06A**
Lab Sample Id: 625759-012

Matrix: Soil
Date Collected: 05.20.19 13.45

Date Received: 05.29.19 12.15
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090589

Date Prep: 05.29.19 13.00

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	05.30.19 03.48	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.30.19 03.48	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.30.19 03.48	U	1
m,p-Xylenes	179601-23-1	0.00466	0.00398	mg/kg	05.30.19 03.48		1
o-Xylene	95-47-6	0.00210	0.00199	mg/kg	05.30.19 03.48		1
Total Xylenes	1330-20-7	0.00676	0.00199	mg/kg	05.30.19 03.48		1
Total BTEX		0.00676	0.00199	mg/kg	05.30.19 03.48		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	05.30.19 03.48		
4-Bromofluorobenzene	460-00-4	119	%	70-130	05.30.19 03.48		



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH07**
Lab Sample Id: 625759-013

Matrix: Soil
Date Collected: 05.20.19 13.55

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300
Tech: SPC
Analyst: SPC
Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	35.5	5.00	mg/kg	05.29.19 17.22		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 18.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 18.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 18.32	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 18.32	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 18.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	05.29.19 18.32	
o-Terphenyl	84-15-1	94	%	70-135	05.29.19 18.32	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH07**
Lab Sample Id: 625759-013

Matrix: Soil
Date Collected: 05.20.19 13.55

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.29.19 13.00

Basis: Wet Weight

Seq Number: 3090589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.30.19 04.07	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.30.19 04.07	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.30.19 04.07	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.30.19 04.07	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.30.19 04.07	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.30.19 04.07	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.30.19 04.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	05.30.19 04.07		
1,4-Difluorobenzene	540-36-3	95	%	70-130	05.30.19 04.07		



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH07A**
Lab Sample Id: 625759-014

Matrix: Soil
Date Collected: 05.20.19 14.00

Date Received: 05.29.19 12.15
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	100	5.02	mg/kg	05.29.19 17.43		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 18.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 18.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 18.52	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 18.52	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 18.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	05.29.19 18.52	
o-Terphenyl	84-15-1	95	%	70-135	05.29.19 18.52	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH07A**
Lab Sample Id: 625759-014

Matrix: Soil
Date Collected: 05.20.19 14.00

Date Received: 05.29.19 12.15
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090589

Date Prep: 05.29.19 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.30.19 04.26	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.30.19 04.26	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	05.30.19 04.26	U	1
m,p-Xylenes	179601-23-1	0.00585	0.00397	mg/kg	05.30.19 04.26		1
o-Xylene	95-47-6	0.00248	0.00198	mg/kg	05.30.19 04.26		1
Total Xylenes	1330-20-7	0.00833	0.00198	mg/kg	05.30.19 04.26		1
Total BTEX		0.00833	0.00198	mg/kg	05.30.19 04.26		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	70-130	05.30.19 04.26		
4-Bromofluorobenzene	460-00-4	120	%	70-130	05.30.19 04.26		



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH08**
Lab Sample Id: 625759-015

Matrix: Soil
Date Collected: 05.22.19 09.40

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300
Tech: SPC
Analyst: SPC
Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	127	5.00	mg/kg	05.29.19 17.51		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	05.29.19 19.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	05.29.19 19.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	05.29.19 19.11	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	05.29.19 19.11	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	05.29.19 19.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	05.29.19 19.11	
o-Terphenyl	84-15-1	95	%	70-135	05.29.19 19.11	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH08**
Lab Sample Id: 625759-015

Matrix: Soil
Date Collected: 05.22.19 09.40

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.29.19 13.00

Basis: Wet Weight

Seq Number: 3090589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.30.19 04.45	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.30.19 04.45	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.30.19 04.45	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.30.19 04.45	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.30.19 04.45	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.30.19 04.45	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.30.19 04.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	05.30.19 04.45		
4-Bromofluorobenzene	460-00-4	121	%	70-130	05.30.19 04.45		



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH08A**
Lab Sample Id: 625759-016

Matrix: Soil
Date Collected: 05.22.19 09.45

Date Received: 05.29.19 12.15
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	120	5.03	mg/kg	05.29.19 17.58		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 19.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 19.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 19.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 19.30	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 19.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	05.29.19 19.30	
o-Terphenyl	84-15-1	94	%	70-135	05.29.19 19.30	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH08A**
Lab Sample Id: 625759-016

Matrix: Soil
Date Collected: 05.22.19 09.45

Date Received: 05.29.19 12.15
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090589

Date Prep: 05.29.19 13.00

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	05.30.19 05.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.30.19 05.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.30.19 05.04	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.30.19 05.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.30.19 05.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.30.19 05.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.30.19 05.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	05.30.19 05.04		
4-Bromofluorobenzene	460-00-4	123	%	70-130	05.30.19 05.04		



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH09**
Lab Sample Id: 625759-017

Matrix: Soil
Date Collected: 05.22.19 08.15

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300
Tech: SPC
Analyst: SPC
Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	29.5	4.97	mg/kg	05.29.19 18.05		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 19.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 19.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 19.49	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 19.49	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 19.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	05.29.19 19.49	
o-Terphenyl	84-15-1	91	%	70-135	05.29.19 19.49	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH09**
Lab Sample Id: 625759-017

Matrix: Soil
Date Collected: 05.22.19 08.15

Date Received: 05.29.19 12.15
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.29.19 13.00

Basis: Wet Weight

Seq Number: 3090589

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.30.19 05.23	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.30.19 05.23	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.30.19 05.23	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	05.30.19 05.23	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.30.19 05.23	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.30.19 05.23	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.30.19 05.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	05.30.19 05.23		
4-Bromofluorobenzene	460-00-4	120	%	70-130	05.30.19 05.23		



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH09A**
Lab Sample Id: 625759-018

Matrix: Soil
Date Collected: 05.22.19 08.40

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300
Tech: SPC
Analyst: SPC
Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.6	5.04	mg/kg	05.29.19 18.12		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090586

Date Prep: 05.29.19 11.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 20.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 20.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 20.09	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 20.09	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 20.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.29.19 20.09	
o-Terphenyl	84-15-1	90	%	70-135	05.29.19 20.09	



Certificate of Analytical Results 625759



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **BH09A**
Lab Sample Id: 625759-018

Matrix: Soil
Date Collected: 05.22.19 08.40

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090589

Date Prep: 05.29.19 13.00

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	05.30.19 05.42	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.30.19 05.42	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.30.19 05.42	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.30.19 05.42	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.30.19 05.42	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.30.19 05.42	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.30.19 05.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	05.30.19 05.42		
1,4-Difluorobenzene	540-36-3	95	%	70-130	05.30.19 05.42		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



QC Summary 625759

LT Environmental, Inc.

Ross Draw 30-31

Analytical Method: Chloride by EPA 300

Seq Number: 3090535

MB Sample Id: 7678770-1-BLK

Matrix: Solid

LCS Sample Id: 7678770-1-BKS

Prep Method: E300P

Date Prep: 05.29.19

LCSD Sample Id: 7678770-1-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	228	91	228	91	90-110	0	20	mg/kg	05.29.19 13:10	

Analytical Method: Chloride by EPA 300

Seq Number: 3090535

Parent Sample Id: 625759-007

Matrix: Soil

MS Sample Id: 625759-007 S

Prep Method: E300P

Date Prep: 05.29.19

MSD Sample Id: 625759-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	17.6	250	257	96	255	95	90-110	1	20	mg/kg	05.29.19 14:55	

Analytical Method: Chloride by EPA 300

Seq Number: 3090535

Parent Sample Id: 625759-009

Matrix: Soil

MS Sample Id: 625759-009 S

Prep Method: E300P

Date Prep: 05.29.19

MSD Sample Id: 625759-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	52.1	251	296	97	296	97	90-110	0	20	mg/kg	05.29.19 17:00	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3090586

MB Sample Id: 7678857-1-BLK

Matrix: Solid

LCS Sample Id: 7678857-1-BKS

Prep Method: TX1005P

Date Prep: 05.29.19

LCSD Sample Id: 7678857-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1070	107	1060	106	70-135	1	20	mg/kg	05.29.19 13:02	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1020	102	70-135	1	20	mg/kg	05.29.19 13:02	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	95		119		121		70-135	%	05.29.19 13:02
o-Terphenyl	96		104		114		70-135	%	05.29.19 13:02

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

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

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

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



QC Summary 625759

LT Environmental, Inc.

Ross Draw 30-31

Analytical Method: TPH by SW8015 Mod

Seq Number: 3090586

Parent Sample Id: 625759-001

Matrix: Soil

MS Sample Id: 625759-001 S

Prep Method: TX1005P

Date Prep: 05.29.19

MSD Sample Id: 625759-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	1070	107	1080	108	70-135	1	20	mg/kg	05.29.19 14:01	
Diesel Range Organics (DRO)	<8.11	998	1020	102	1060	106	70-135	4	20	mg/kg	05.29.19 14:01	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		119		70-135	%	05.29.19 14:01
o-Terphenyl	106		106		70-135	%	05.29.19 14:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3090589

MB Sample Id: 7678775-1-BLK

Matrix: Solid

LCS Sample Id: 7678775-1-BKS

Prep Method: SW5030B

Date Prep: 05.29.19

LCSD Sample Id: 7678775-1-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	0.0975	98	0.0957	96	70-130	2	35	mg/kg	05.29.19 21:32	
Toluene	<0.00200	0.0998	0.101	101	0.0983	98	70-130	3	35	mg/kg	05.29.19 21:32	
Ethylbenzene	<0.00200	0.0998	0.112	112	0.109	109	70-130	3	35	mg/kg	05.29.19 21:32	
m,p-Xylenes	<0.00399	0.200	0.239	120	0.232	116	70-130	3	35	mg/kg	05.29.19 21:32	
o-Xylene	<0.00200	0.0998	0.116	116	0.112	112	70-130	4	35	mg/kg	05.29.19 21:32	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		90		90		70-130	%	05.29.19 21:32
4-Bromofluorobenzene	108		104		103		70-130	%	05.29.19 21:32

Analytical Method: BTEX by EPA 8021B

Seq Number: 3090589

Parent Sample Id: 625759-001

Matrix: Soil

MS Sample Id: 625759-001 S

Prep Method: SW5030B

Date Prep: 05.29.19

MSD Sample Id: 625759-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0766	76	0.0705	71	70-130	8	35	mg/kg	05.29.19 22:10	
Toluene	<0.00202	0.101	0.0825	82	0.0711	72	70-130	15	35	mg/kg	05.29.19 22:10	
Ethylbenzene	<0.00202	0.101	0.0871	86	0.0729	73	70-130	18	35	mg/kg	05.29.19 22:10	
m,p-Xylenes	0.00370	0.202	0.190	92	0.160	79	70-130	17	35	mg/kg	05.29.19 22:10	
o-Xylene	<0.00202	0.101	0.0929	92	0.0772	78	70-130	18	35	mg/kg	05.29.19 22:10	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		92		70-130	%	05.29.19 22:10
4-Bromofluorobenzene	114		109		70-130	%	05.29.19 22:10

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

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

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

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



Work Order No:

1057509

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) El Paso, TX (915)555-3443 Lubbock, TX (806)794-1296
Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813)

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Page 1 of 2

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

ANALYSIS REQUEST										Work Order Notes
of Containers										
8015)										
A 0=8021)										
EPA 300.0)										
TAT starts the day received by the										

[illegible]

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

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 <i>Scott J...</i>	<i>[Signature]</i>	05/28/25 11:00	2 <i>[Signature]</i>	<i>[Signature]</i>	05/28/25 12:00
3			4	<i>[Signature]</i>	5/29/25
5			6		12:5



Chain of Custody

Work Order No: 65759

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

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Page 2 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrell
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@ltenry.com

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

Project Name:	Ross Draw 30-31	Turn Around	
Project Number:		Routine	☐
P.O. Number:	2 R.P. 5330	Rush:	Yes ☒ No ☐
Sampler's Name:	Garrett Green	Due Date:	5/30

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
Temperature (°C):	0.0/0.0	Thermometer ID		
Received Intact:	Yes ☒ No ☐			
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Correction Factor:	-0.0	
Sample Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST			Lab. Use
					Number	TPH (EPA)	BTEX (EPA)	
BH06	S	5/20/19	1340	1'	1	X	X	
BH06A		5/20/19	1345	2'	1	X	X	
BH07		5/20/19	1355	1'	1	X	X	
BH07A		5/20/19	1400	2'	1	X	X	
BH08		5/22/19	0940	1'	1	X	X	
BH08A		5/22/19	0945	2'	1	X	X	
BH09		5/22/19	0815	1'	1	X	X	
BH09A		5/22/19	0840	4'	1	X	X	
Signature: 								
Sample Comments								
lab, if received by 4:30pm								

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

Circle Method(s) and Meta(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>	05/20/19 11:00	<i>[Signature]</i>	<i>[Signature]</i>	05/20/19 12:25
					05/20/19 12:25



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 05/29/2019 12:15:00 PM

Work Order #: 625759

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 05/29/2019

Checklist reviewed by:

Kalei Stout

Kalei Stout

Date: 05/29/2019

Analytical Report 625760

for
LT Environmental, Inc.

Project Manager: Dan Moir

Ross Draw 30-31

05-JUN-19

Collected By: Client



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

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

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

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



05-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **625760**

Ross Draw 30-31

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) 625760. 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. 625760 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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Sample Cross Reference 625760



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS02A	S	05-20-19 14:50	3 ft	625760-001
SS03A	S	05-20-19 15:10	4 ft	625760-002



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Ross Draw 30-31*

Project ID:
Work Order Number(s): 625760

Report Date: 05-JUN-19
Date Received: 05/29/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3090589 BTEX by EPA 8021B

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



Certificate of Analysis Summary 625760

LT Environmental, Inc., Arvada, CO

Project Name: Ross Draw 30-31



Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Wed May-29-19 12:15 pm

Report Date: 05-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	625760-001	625760-002				
	Field Id:	SS02A	SS03A				
	Depth:	3- ft	4- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	May-20-19 14:50	May-20-19 15:10				
BTEX by EPA 8021B	Extracted:	May-29-19 13:00	May-29-19 13:00				
	Analyzed:	May-30-19 06:01	May-30-19 06:20				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00199 0.00199	<0.00201 0.00201				
Toluene		<0.00199 0.00199	<0.00201 0.00201				
Ethylbenzene		<0.00199 0.00199	<0.00201 0.00201				
m,p-Xylenes		0.00558 0.00398	0.00425 0.00402				
o-Xylene		0.0104 0.00199	0.00287 0.00201				
Total Xylenes		0.0160 0.00199	0.00712 0.00201				
Total BTEX		0.0160 0.00199	0.00712 0.00201				
Chloride by EPA 300	Extracted:	** ** *	** ** *				
	Analyzed:	May-29-19 18:20	May-29-19 18:27				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		<5.02 5.02	51.7 4.98				
TPH by SW8015 Mod	Extracted:	May-29-19 17:00	Jun-01-19 10:00				
	Analyzed:	May-30-19 02:16	Jun-02-19 00:00				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0				
Diesel Range Organics (DRO)		99.6 15.0	79.7 15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0				
Total TPH		99.6 15.0	79.7 15.0				
Total GRO-DRO		99.6 15.0	79.7 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: 1.0%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 625760



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **SS02A**
Lab Sample Id: 625760-001

Matrix: Soil
Date Collected: 05.20.19 14.50

Date Received: 05.29.19 12.15
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300
Tech: SPC
Analyst: SPC
Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.02	5.02	mg/kg	05.29.19 18.20	U	1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090591

Date Prep: 05.29.19 17.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.30.19 02.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	99.6	15.0	mg/kg	05.30.19 02.16		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.30.19 02.16	U	1
Total TPH	PHC635	99.6	15.0	mg/kg	05.30.19 02.16		1
Total GRO-DRO	PHC628	99.6	15.0	mg/kg	05.30.19 02.16		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	05.30.19 02.16	
o-Terphenyl	84-15-1	96	%	70-135	05.30.19 02.16	



Certificate of Analytical Results 625760



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **SS02A**
Lab Sample Id: 625760-001

Matrix: Soil
Date Collected: 05.20.19 14.50

Date Received: 05.29.19 12.15
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090589

Date Prep: 05.29.19 13.00

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	05.30.19 06.01	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.30.19 06.01	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.30.19 06.01	U	1
m,p-Xylenes	179601-23-1	0.00558	0.00398	mg/kg	05.30.19 06.01		1
o-Xylene	95-47-6	0.0104	0.00199	mg/kg	05.30.19 06.01		1
Total Xylenes	1330-20-7	0.0160	0.00199	mg/kg	05.30.19 06.01		1
Total BTEX		0.0160	0.00199	mg/kg	05.30.19 06.01		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	70-130	05.30.19 06.01		
4-Bromofluorobenzene	460-00-4	119	%	70-130	05.30.19 06.01		



Certificate of Analytical Results 625760



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **SS03A**
Lab Sample Id: 625760-002

Matrix: Soil
Date Collected: 05.20.19 15.10

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300
Tech: SPC
Analyst: SPC
Seq Number: 3090535

Date Prep: 05.29.19 12.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	51.7	4.98	mg/kg	05.29.19 18.27		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090920

Date Prep: 06.01.19 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	06.02.19 00.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	79.7	15.0	mg/kg	06.02.19 00.00		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.02.19 00.00	U	1
Total TPH	PHC635	79.7	15.0	mg/kg	06.02.19 00.00		1
Total GRO-DRO	PHC628	79.7	15.0	mg/kg	06.02.19 00.00		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	06.02.19 00.00	
o-Terphenyl	84-15-1	96	%	70-135	06.02.19 00.00	



Certificate of Analytical Results 625760



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **SS03A**
Lab Sample Id: 625760-002

Matrix: Soil
Date Collected: 05.20.19 15.10

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090589

Date Prep: 05.29.19 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.30.19 06.20	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.30.19 06.20	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.30.19 06.20	U	1
m,p-Xylenes	179601-23-1	0.00425	0.00402	mg/kg	05.30.19 06.20		1
o-Xylene	95-47-6	0.00287	0.00201	mg/kg	05.30.19 06.20		1
Total Xylenes	1330-20-7	0.00712	0.00201	mg/kg	05.30.19 06.20		1
Total BTEX		0.00712	0.00201	mg/kg	05.30.19 06.20		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	05.30.19 06.20		
1,4-Difluorobenzene	540-36-3	95	%	70-130	05.30.19 06.20		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



QC Summary 625760

LT Environmental, Inc.

Ross Draw 30-31

Analytical Method: Chloride by EPA 300

Seq Number: 3090535

MB Sample Id: 7678770-1-BLK

Matrix: Solid

LCS Sample Id: 7678770-1-BKS

Prep Method: E300P

Date Prep: 05.29.19

LCSD Sample Id: 7678770-1-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	228	91	228	91	90-110	0	20	mg/kg	05.29.19 13:10	

Analytical Method: Chloride by EPA 300

Seq Number: 3090535

Parent Sample Id: 625759-007

Matrix: Soil

MS Sample Id: 625759-007 S

Prep Method: E300P

Date Prep: 05.29.19

MSD Sample Id: 625759-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	17.6	250	257	96	255	95	90-110	1	20	mg/kg	05.29.19 14:55	

Analytical Method: Chloride by EPA 300

Seq Number: 3090535

Parent Sample Id: 625759-009

Matrix: Soil

MS Sample Id: 625759-009 S

Prep Method: E300P

Date Prep: 05.29.19

MSD Sample Id: 625759-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	52.1	251	296	97	296	97	90-110	0	20	mg/kg	05.29.19 17:00	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3090591

MB Sample Id: 7678858-1-BLK

Matrix: Solid

LCS Sample Id: 7678858-1-BKS

Prep Method: TX1005P

Date Prep: 05.29.19

LCSD Sample Id: 7678858-1-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)	13.1	1000	1090	109	1100	110	70-135	1	20	mg/kg	05.29.19 21:26	
Diesel Range Organics (DRO)	10.9	1000	1010	101	1010	101	70-135	0	20	mg/kg	05.29.19 21:26	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		120		123		70-135	%	05.29.19 21:26
o-Terphenyl	100		114		116		70-135	%	05.29.19 21:26

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

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

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

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



QC Summary 625760

LT Environmental, Inc.

Ross Draw 30-31

Analytical Method: TPH by SW8015 Mod

Seq Number: 3090920

MB Sample Id: 7679065-1-BLK

Matrix: Solid

LCS Sample Id: 7679065-1-BKS

Prep Method: TX1005P

Date Prep: 06.01.19

LCSD Sample Id: 7679065-1-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	1190	119	1200	120	70-135	1	20	mg/kg	06.01.19 21:25	
Diesel Range Organics (DRO)	<8.13	1000	1190	119	1150	115	70-135	3	20	mg/kg	06.01.19 21:25	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date	Flag		
1-Chlorooctane	99		126		127		70-135	%	06.01.19 21:25			
o-Terphenyl	99		114		125		70-135	%	06.01.19 21:25			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3090591

Parent Sample Id: 625763-001

Matrix: Soil

MS Sample Id: 625763-001 S

Prep Method: TX1005P

Date Prep: 05.29.19

MSD Sample Id: 625763-001 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)	13.9	1000	1100	109	1100	109	70-135	0	20	mg/kg	05.29.19 22:24	
Diesel Range Organics (DRO)	238	1000	1140	90	1150	91	70-135	1	20	mg/kg	05.29.19 22:24	
Surrogate			MS %Rec	MS Flag		MSD %Rec	MSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane			118			114			70-135	%	05.29.19 22:24	
o-Terphenyl			113			105			70-135	%	05.29.19 22:24	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3090920

Parent Sample Id: 625944-001

Matrix: Water

MS Sample Id: 625944-001 S

Prep Method: TX1005P

Date Prep: 06.01.19

MSD Sample Id: 625944-001 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)	9.13	999	1050	104	1040	103	70-135	1	20	mg/kg	06.01.19 22:23	
Diesel Range Organics (DRO)	13.9	999	1010	100	1010	100	70-135	0	20	mg/kg	06.01.19 22:23	
Surrogate			MS %Rec	MS Flag		MSD %Rec	MSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane			121			119			70-135	%	06.01.19 22:23	
o-Terphenyl			94			103			70-135	%	06.01.19 22:23	

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

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

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

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



QC Summary 625760

LT Environmental, Inc.

Ross Draw 30-31

Analytical Method: BTEX by EPA 8021B

Seq Number: 3090589

MB Sample Id: 7678775-1-BLK

Matrix: Solid

LCS Sample Id: 7678775-1-BKS

Prep Method: SW5030B

Date Prep: 05.29.19

LCSD Sample Id: 7678775-1-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	0.0975	98	0.0957	96	70-130	2	35	mg/kg	05.29.19 21:32	
Toluene	<0.00200	0.0998	0.101	101	0.0983	98	70-130	3	35	mg/kg	05.29.19 21:32	
Ethylbenzene	<0.00200	0.0998	0.112	112	0.109	109	70-130	3	35	mg/kg	05.29.19 21:32	
m,p-Xylenes	<0.00399	0.200	0.239	120	0.232	116	70-130	3	35	mg/kg	05.29.19 21:32	
o-Xylene	<0.00200	0.0998	0.116	116	0.112	112	70-130	4	35	mg/kg	05.29.19 21:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		90		90		70-130	%	05.29.19 21:32
4-Bromofluorobenzene	108		104		103		70-130	%	05.29.19 21:32

Analytical Method: BTEX by EPA 8021B

Seq Number: 3090589

Parent Sample Id: 625759-001

Matrix: Soil

MS Sample Id: 625759-001 S

Prep Method: SW5030B

Date Prep: 05.29.19

MSD Sample Id: 625759-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0766	76	0.0705	71	70-130	8	35	mg/kg	05.29.19 22:10	
Toluene	<0.00202	0.101	0.0825	82	0.0711	72	70-130	15	35	mg/kg	05.29.19 22:10	
Ethylbenzene	<0.00202	0.101	0.0871	86	0.0729	73	70-130	18	35	mg/kg	05.29.19 22:10	
m,p-Xylenes	0.00370	0.202	0.190	92	0.160	79	70-130	17	35	mg/kg	05.29.19 22:10	
o-Xylene	<0.00202	0.101	0.0929	92	0.0772	78	70-130	18	35	mg/kg	05.29.19 22:10	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		92		70-130	%	05.29.19 22:10
4-Bromofluorobenzene	114		109		70-130	%	05.29.19 22:10

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

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

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

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

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) 586-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (480-355-0900) Atlanta, GA (770-448-8800) Tampa, FL (813-392-7550)
Hobbs, NM (575-392-7550)

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Page 1 of 7

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrell
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

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

[illegible]

Total	200.7 / 6010	200.8 / 6020:	
<i>Circle Method(s) and Metal(s) to be analyzed</i>	8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U		1631 / 245.1 / 7470 / 7471 : Hg

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 		08/08/19 11:00	2 		08/08/19 12:00
3			4		5/09/19 11:00
5			6		



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 05/29/2019 12:15:00 PM

Work Order #: 625760

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: 05/29/2019

Checklist reviewed by:



Kalei Stout

Date: 05/29/2019

Analytical Report 625761

for
LT Environmental, Inc.

Project Manager: Dan Moir

Ross Draw 30-31

05-JUN-19

Collected By: Client



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

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

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

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



05-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **625761**

Ross Draw 30-31

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) 625761. 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. 625761 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 625761



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01A	S	05-24-19 11:50	3 ft	625761-001
SS04A	S	05-24-19 12:30	4 ft	625761-002



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Ross Draw 30-31*

Project ID:
Work Order Number(s): 625761

Report Date: 05-JUN-19
Date Received: 05/29/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3090594 BTEX by EPA 8021B

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



Certificate of Analysis Summary 625761

LT Environmental, Inc., Arvada, CO

Project Name: Ross Draw 30-31



Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Wed May-29-19 12:15 pm

Report Date: 05-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	625761-001	625761-002				
	Field Id:	SS01A	SS04A				
	Depth:	3- ft	4- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	May-24-19 11:50	May-24-19 12:30				
BTEX by EPA 8021B	Extracted:	May-29-19 14:30	May-29-19 14:30				
	Analyzed:	May-29-19 23:32	May-29-19 23:51				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00200 0.00200	<0.00198 0.00198				
Toluene		<0.00200 0.00200	<0.00198 0.00198				
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198				
m,p-Xylenes		<0.00399 0.00399	0.00840 0.00397				
o-Xylene		<0.00200 0.00200	0.00341 0.00198				
Total Xylenes		<0.00200 0.00200	0.0118 0.00198				
Total BTEX		<0.00200 0.00200	0.0118 0.00198				
Chloride by EPA 300	Extracted:	May-29-19 15:30	May-29-19 15:30				
	Analyzed:	May-29-19 20:01	May-29-19 20:09				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		69.7 50.5	65.5 25.1				
TPH by SW8015 Mod	Extracted:	May-29-19 17:00	Jun-01-19 08:00				
	Analyzed:	May-30-19 02:54	Jun-01-19 20:26				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0				
Diesel Range Organics (DRO)		60.0 15.0	70.9 15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0				
Total TPH		60.0 15.0	70.9 15.0				
Total GRO-DRO		60.0 15.0	70.9 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 625761



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **SS01A**
Lab Sample Id: 625761-001

Matrix: Soil
Date Collected: 05.24.19 11.50

Date Received: 05.29.19 12.15
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090539

Date Prep: 05.29.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	69.7	50.5	mg/kg	05.29.19 20.01		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090591

Date Prep: 05.29.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.30.19 02.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	60.0	15.0	mg/kg	05.30.19 02.54		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.30.19 02.54	U	1
Total TPH	PHC635	60.0	15.0	mg/kg	05.30.19 02.54		1
Total GRO-DRO	PHC628	60.0	15.0	mg/kg	05.30.19 02.54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	05.30.19 02.54	
o-Terphenyl	84-15-1	93	%	70-135	05.30.19 02.54	



Certificate of Analytical Results 625761



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **SS01A**
Lab Sample Id: 625761-001

Matrix: Soil
Date Collected: 05.24.19 11.50

Date Received: 05.29.19 12.15
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090594

Date Prep: 05.29.19 14.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.29.19 23.32	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.29.19 23.32	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.29.19 23.32	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.29.19 23.32	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.29.19 23.32	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.29.19 23.32	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.29.19 23.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	05.29.19 23.32		
1,4-Difluorobenzene	540-36-3	99	%	70-130	05.29.19 23.32		



Certificate of Analytical Results 625761



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **SS04A**
Lab Sample Id: 625761-002

Matrix: Soil
Date Collected: 05.24.19 12.30

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090539

Date Prep: 05.29.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	65.5	25.1	mg/kg	05.29.19 20.09		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090918

Date Prep: 06.01.19 08.00

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	06.01.19 20.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	70.9	15.0	mg/kg	06.01.19 20.26		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.01.19 20.26	U	1
Total TPH	PHC635	70.9	15.0	mg/kg	06.01.19 20.26		1
Total GRO-DRO	PHC628	70.9	15.0	mg/kg	06.01.19 20.26		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	06.01.19 20.26	
o-Terphenyl	84-15-1	97	%	70-135	06.01.19 20.26	



Certificate of Analytical Results 625761



LT Environmental, Inc., Arvada, CO

Ross Draw 30-31

Sample Id: **SS04A**
Lab Sample Id: 625761-002

Matrix: Soil
Date Collected: 05.24.19 12.30

Date Received: 05.29.19 12.15
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090594

Date Prep: 05.29.19 14.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.29.19 23.51	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.29.19 23.51	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	05.29.19 23.51	U	1
m,p-Xylenes	179601-23-1	0.00840	0.00397	mg/kg	05.29.19 23.51		1
o-Xylene	95-47-6	0.00341	0.00198	mg/kg	05.29.19 23.51		1
Total Xylenes	1330-20-7	0.0118	0.00198	mg/kg	05.29.19 23.51		1
Total BTEX		0.0118	0.00198	mg/kg	05.29.19 23.51		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	05.29.19 23.51		
1,4-Difluorobenzene	540-36-3	99	%	70-130	05.29.19 23.51		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



QC Summary 625761

LT Environmental, Inc.

Ross Draw 30-31

Analytical Method: Chloride by EPA 300

Seq Number: 3090539

MB Sample Id: 7678781-1-BLK

Matrix: Solid

LCS Sample Id: 7678781-1-BKS

Prep Method: E300P

Date Prep: 05.29.19

LCSD Sample Id: 7678781-1-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	230	92	232	93	90-110	1	20	mg/kg	05.29.19 19:18	

Analytical Method: Chloride by EPA 300

Seq Number: 3090539

Parent Sample Id: 625762-001

Matrix: Soil

MS Sample Id: 625762-001 S

Prep Method: E300P

Date Prep: 05.29.19

MSD Sample Id: 625762-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10.2	252	263	100	263	100	90-110	0	20	mg/kg	05.29.19 19:40	

Analytical Method: Chloride by EPA 300

Seq Number: 3090539

Parent Sample Id: 625764-007

Matrix: Soil

MS Sample Id: 625764-007 S

Prep Method: E300P

Date Prep: 05.29.19

MSD Sample Id: 625764-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8.89	281	284	98	286	99	90-110	1	20	mg/kg	05.29.19 21:21	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3090591

MB Sample Id: 7678858-1-BLK

Matrix: Solid

LCS Sample Id: 7678858-1-BKS

Prep Method: TX1005P

Date Prep: 05.29.19

LCSD Sample Id: 7678858-1-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)	13.1	1000	1090	109	1100	110	70-135	1	20	mg/kg	05.29.19 21:26	
Diesel Range Organics (DRO)	10.9	1000	1010	101	1010	101	70-135	0	20	mg/kg	05.29.19 21:26	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		120		123		70-135	%	05.29.19 21:26
o-Terphenyl	100		114		116		70-135	%	05.29.19 21:26

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

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

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

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



QC Summary 625761

LT Environmental, Inc.

Ross Draw 30-31

Analytical Method: TPH by SW8015 Mod

Seq Number: 3090918

MB Sample Id: 7679064-1-BLK

Matrix: Solid

LCS Sample Id: 7679064-1-BKS

Prep Method: TX1005P

Date Prep: 06.01.19

LCSD Sample Id: 7679064-1-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	1170	117	1200	120	70-135	3	20	mg/kg	06.01.19 12:31	
Diesel Range Organics (DRO)	<8.13	1000	1140	114	1170	117	70-135	3	20	mg/kg	06.01.19 12:31	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date	Flag		
1-Chlorooctane	96		124		122		70-135	%	06.01.19 12:31			
o-Terphenyl	96		103		105		70-135	%	06.01.19 12:31			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3090591

Parent Sample Id: 625763-001

Matrix: Soil

MS Sample Id: 625763-001 S

Prep Method: TX1005P

Date Prep: 05.29.19

MSD Sample Id: 625763-001 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)	13.9	1000	1100	109	1100	109	70-135	0	20	mg/kg	05.29.19 22:24	
Diesel Range Organics (DRO)	238	1000	1140	90	1150	91	70-135	1	20	mg/kg	05.29.19 22:24	
Surrogate			MS %Rec	MS Flag		MSD %Rec	MSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane			118			114			70-135	%	05.29.19 22:24	
o-Terphenyl			113			105			70-135	%	05.29.19 22:24	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3090918

Parent Sample Id: 625765-001

Matrix: Soil

MS Sample Id: 625765-001 S

Prep Method: TX1005P

Date Prep: 06.01.19

MSD Sample Id: 625765-001 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)	835	996	1740	91	1720	89	70-135	1	20	mg/kg	06.01.19 13:30	
Diesel Range Organics (DRO)	1200	996	2070	87	2050	85	70-135	1	20	mg/kg	06.01.19 13:30	
Surrogate			MS %Rec	MS Flag		MSD %Rec	MSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane			128			113			70-135	%	06.01.19 13:30	
o-Terphenyl			100			95			70-135	%	06.01.19 13:30	

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

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

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

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



QC Summary 625761

LT Environmental, Inc.

Ross Draw 30-31

Analytical Method: BTEX by EPA 8021B

Seq Number: 3090594

MB Sample Id: 7678786-1-BLK

Matrix: Solid

LCS Sample Id: 7678786-1-BKS

Prep Method: SW5030B

Date Prep: 05.29.19

LCSD Sample Id: 7678786-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000387	0.101	0.107	106	0.110	110	70-130	3	35	mg/kg	05.29.19 21:40	
Toluene	<0.000458	0.101	0.0993	98	0.101	101	70-130	2	35	mg/kg	05.29.19 21:40	
Ethylbenzene	<0.000568	0.101	0.105	104	0.106	106	70-130	1	35	mg/kg	05.29.19 21:40	
m,p-Xylenes	<0.00102	0.201	0.215	107	0.220	111	70-130	2	35	mg/kg	05.29.19 21:40	
o-Xylene	<0.000346	0.101	0.106	105	0.109	109	70-130	3	35	mg/kg	05.29.19 21:40	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		103		106		70-130	%	05.29.19 21:40
4-Bromofluorobenzene	81		95		103		70-130	%	05.29.19 21:40

Analytical Method: BTEX by EPA 8021B

Seq Number: 3090594

Parent Sample Id: 625761-001

Matrix: Soil

MS Sample Id: 625761-001 S

Prep Method: SW5030B

Date Prep: 05.29.19

MSD Sample Id: 625761-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0958	96	0.0952	95	70-130	1	35	mg/kg	05.29.19 22:18	
Toluene	<0.000456	0.100	0.0854	85	0.0837	84	70-130	2	35	mg/kg	05.29.19 22:18	
Ethylbenzene	<0.000565	0.100	0.0831	83	0.0803	80	70-130	3	35	mg/kg	05.29.19 22:18	
m,p-Xylenes	<0.00101	0.200	0.169	85	0.162	81	70-130	4	35	mg/kg	05.29.19 22:18	
o-Xylene	<0.000344	0.100	0.0838	84	0.0808	81	70-130	4	35	mg/kg	05.29.19 22:18	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		106		70-130	%	05.29.19 22:18
4-Bromofluorobenzene	99		104		70-130	%	05.29.19 22:18

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

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

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

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

Houston, TX (281) 240-4200 Dallas, TX (214) 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) 345-0000 Albuquerque, NM (505) 762-0000

Hobbs, NIM (575-392-7550) Phoenix, AZ (480-355-0800) Atlanta GA (770-449-8800) Tampa, FL (813-620-2000)

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Page 1 of 1

HODDS, NIM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-291-1111)			
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

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

Project Name:	Koss Law 30-31	Turn Around
Project Number:		Routine ☐
P.O. Number:	280-5330	Rush: Yes
Sampler's Name:	Garrett Green	Due Date: 5/30

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	0.1°C						
Received Intact:	Yes No						
Cooler Custody Seals:	Yes No						
Sample Custody Seals:	Yes No						

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth
-----------------------	--------	--------------	--------------	-------

5501A	S	5/24/19	1150	3'	1	X	X	X
5504A	S	5/24/19	1230	4'	1	X	X	X

Total	200.7 / 6010	200.8 / 6020:
-------	--------------	---------------

[illegible]

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

TCLP / SPLP 6010. 8BCBA Sh As Ba Be Cd Cr Cu Fe Hg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn

1631 / 245.1 / 7470 / 7471 . H-

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)

					Date/Time
			Received by: (Signature)	Inequired by: (Signature)	Date/Time

[illegible][illegible]



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 05/29/2019 12:15:00 PM

Work Order #: 625761

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 05/29/2019

Checklist reviewed by:

Kalei Stout

Kalei Stout

Date: 05/29/2019





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

Compliance · Engineering · Remediation

Identifier:

BH01

Date:

5/20 - 5/22

Project Name:

Ross Draw 30-31

RP Number:

ZRP-5330

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: GG

Method: HA

Lat/Long:

Field Screening:

CTS / PID

Hole Diameter:

Total Depth:

1'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1225 D	313	12.8	N	1	0	1'		caliche, white-tan, low plasticity,
1230 D	180	7.5	N	2	1	2'		caliche/clay loam, white/red
5/22 0850 D	180	6.8		3	2	3'		caliche/clay loam, red brown
0900 D	180	6.2		4	3	4'		caliche clay loam, red brown
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

BH02

Date:

5/20/19 ~ 5/22

Project Name:

Ross Draw 30-31

RP Number:

2RP-5330

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

RTS/PJD

Logged By: GG

Method: HA

Hole Diameter:

Total Depth:

4'

Comments:

1240

1245

5/22

0915

0925

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<180		N	1	0.5	1'		clay loam, red brown
D	<180		N	2	1	2'		clay loam, red brown
D	<180			3	2	3'		clay loam, brown
D	<180			4	3	4'		caliche, light brown-tan
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

BH03

Date:

5/20 - 5/24

Project Name:

Ross Draw 30-31

RP Number:

2RP-5330

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: GG

Method: WA

Lat/Long:

Field Screening:

CTS / PTO

Hole Diameter:

Total Depth: 4'

Comments:

1255

1300

5/24

005

030

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<180	40.2	N	1	0.5	1'		clay loam, red brown
D	<180	33.6	N	2	1	2'		clay loam, red brown
D	<180	20.1	N	3	2	3'		clay loam, brown
D	<180	7.1	N	4	3	4'		silty clay loam, light brown
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

BH04

Date:

5/20 - 5/24

Project Name:

Ross Draw 30-31

RP Number:

2RP-5330

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

CTS/PID

Logged By: GG

Method: HA

Hole Diameter:

Total Depth:

4'

Comments:

1310

1315

5/24

1045

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	180	2.3	N	1	0'	1'		clay loam, light red brown
D	180	4.8	N	2	1'	2'		clay loam, red brown
D	180	4.5	N	3	2'	3'		clay loam, light red brown
					3'	4'		Auger refusal
					4'			
					5'			
					6'			
					7'			
					8'			
					9'			
					10'			
					11'			
					12'			



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

Compliance · Engineering · Remediation

Identifier:

BH05

Date:

5/20 / 5/24

Project Name:

Ross Draw 30-31

RP Number:

2RP-5330

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

LTS/PID

Logged By: GG

Method: HA

Hole Diameter:

Total Depth:

4'

Comments:

1325

1330

5/24

1120

1145

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	4180	2.6	N	1	1	1		brown, clay loam, med plasticity
D	4180		N	2	2	2		clay loam, red brown,
D	4180	0.6	N	3	3	3		clay loam inter light brown, red
D	4180	3.1	N	4	4	4		clay loam, light brown
					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: BH06

Date: 5/20

Project Name: Ross Draw 30-31

RP Number: 2RP-5330

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: CTS PID

Logged By: GG

Method: HA

Hole Diameter:

Total Depth: 2'

Comments:

340

345

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	1180	44	N	1	0	1'		Caliche/clay loam, low plasticity
D	1180	28	N	2	1	2'		clay loam, red brown, med plasticity
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
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Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

BH07

Date:

5/20

Project Name:

Ross Draw 30-31

RP Number:

ZRP-5330

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

LTS/PID

Logged By:

GG

Method:

HA

Hole Diameter:

Total Depth:

2'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1355	D	2180	28	N	1	1'		caliche, light brown, low plasticity
1400	D	2180	16	N	2	2'		red brown, clay loam
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier: BH08

Date: 5/22

Project Name:

Ross Draw 30-31

RP Number:

2RP-5330

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: GG

Method: HA

Lat/Long:

Field Screening:

CTS / PID

Hole Diameter:

Total Depth:

2'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	180	3.4	N	1	0	1'		clay loam, red brown, med plasticity
D	180	2.8	N	2	1	2'		clay loam, red brown, med plasticity
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
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Compliance · Engineering · Remediation

Identifier: **BH09**

Date: **5/22**

Project Name: **Ross Draw 30-31**

RP Number: **2BP-5330**

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: **GG**

Method: **HA**

Lat/Long:

Field Screening: **CTS / PFD**

Hole Diameter:

Total Depth: **3**

Comments:

0815

D 2180 N

Depth (ft. bgs.) 1

clay loam red brown

0820

D 2180 N

2

0830

D 2180 N

3

0840

D 2180 N

4

clay loam light red brown

5

6

7

8

9

10

11

12



LT Environmental, Inc.
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Compliance · Engineering · Remediation

Identifier:

SS01

Date:

5/20 - 5/24

Project Name:

Ross Draw 30-31

RP Number:

2RP5330

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

LTS/PID

Logged By: GG

Method: HA

Hole Diameter:

Total Depth:

3'

Comments:

1430

1435

5/24

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
D	2180		N	1	1			caliche, white-gray low plasticity
D	2160	1543	N	2	2			clay loam w/caliche - light red/brown med plasticity
D	2180	79.6	N	3	3			caliche w/clay loam, white-gray w/ some redbrown low plasticity
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

SS02

Date:

5/20/5/24

Project Name:

Ross Draw 30-31

RP Number:

ZRP-5330

LITHOLOGIC / SOIL SAMPLING LOG

Logged By:

GG

Method:

HA

Lat/Long:

Field Screening:

CTS/PID

Hole Diameter:

Total Depth:

3'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
	1180	1230			0	1'		Caliche, white-gray
	1180	174			1	2'		clay loam w/caliche; reddish/brown med plasticity
	1150	198			2	3'		clay loam reddish brown
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

SS03

Date:

5/24/2019

Project Name:

Ross Draw 30-31

RP Number:

2RP-5330

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

CIS / PID

Logged By: GG

Method: HA

Hole Diameter:

Total Depth:

Comments:

1455

1500

1505

510

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	180	313	N		0	1		caliche, white - gray
D	180	182	N		1	2		clay loam, light brown med plasticity
D	180	944	N		2	3		clay loam, light red brown
D	180	571	N		3	4		clay loam, light red brown med plasticity
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

SS04

Date:

5/24

Project Name:

Ross Draw 30-31

RP Number:

2RP-5330

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: GG

Method: HA

Lat/Long:

Field Screening:

LTS PID

Hole Diameter:

Total Depth:

4

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
525	D	2180	1452	N		0	1		caliche, white-tan, low plasticity
535	D	2180	247	N		1	2		clay loam, red/brown, med plasticity
540	D	2180	546	N		2	3		clay loam, red/brown, med plasticity
545	D	2180	68	N		3	4		clay loam light red brown w/caliche med plasticity
						4			
						5			
						6			
						7			
						8			
						9			
						10			
						11			
						12			





Northeastern view of release area south of tank battery prior to delineation activities.

Project: 012919047	XTO Energy, Inc. Ross Draw 3031 Battery	
March 20, 2019	Photographic Log	



Northeastern view of release area south of processing equipment prior to delineation activities.

Project: 012919047	XTO Energy, Inc. Ross Draw 3031 Battery	 <i>Advancing Opportunity</i>
March 20, 2019	Photographic Log	